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REPORTED WITHDRAWALS AND ESTIMATED USE OF WATER IN OKLAHOMA DURING 1982

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Water-Resources Investigations Report 85-4084

Prepared in cooperation with the
OKLAHOMA WATER RESOURCES BOARD

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Jerry D. Stoner

U.S. GEOLOGICAL SURVEY
Water-Resources Investigations Report 85-4084

Prepared in cooperation with the
OKLAHOMA WATER RESOURCES BOARD

Oklahoma City, Oklahoma
1985

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SELECTED FACTORS FOR CONVERTING INCH-POUND UNITS TO METRIC UNITS

Inch-pound units used in this report may be converted to metric units by the following conversion factors:

INCH POUND	MULTIPLY BY	METRIC
Gallon	0.0038	Cubic meter
Gallon	3.785	Liter
Gallons per day (gpd)	3.785	Liters per day
Million gallons per day (mgd)	.0038	Million cubic meters per day
Gallons per capita per day (GPCD)	3.785	Liters per capita per day
Gallons per square mile per day [$(gal/mi^2)/d$]	1.461	Liters per square kilometer per day
Square mile (mi^2)	2.590	Square kilometer
Persons per square mile	.386	Persons per square kilometer

REPORTED WITHDRAWALS AND ESTIMATED USE OF WATER IN OKLAHOMA DURING 1982

by Jerry D. Stoner

ABSTRACT

Reported water withdrawals in Oklahoma during 1982 were 1,270.64 million gallons per day. The withdrawals were about equally distributed between ground water and surface water with 46 percent being ground water and 54 percent being surface water. In general, the western counties rely on ground water and the eastern counties rely on surface water as their major sources of supply. The major withdrawal category water suppliers is not subdivided into its component-use categories such as domestic, commercial, and industrial. Estimates were made of the various uses to which water supplied by public suppliers is put. Water use in Oklahoma during 1982 was estimated to be 1,270.14 million gallons per day. This was a difference of less than 0.1 percent between estimated use and reported withdrawals. Oklahoma's major water use is agriculture including irrigation, which was 42 percent of the total water used during 1982. Many counties in Oklahoma, particularly those counties in the west, use more water for agricultural uses than the total of all other water uses in the county. Several counties were identified as major water exporters. Most of the exporting counties used surface water as their major source of supply. Several counties were also identified as major importers of water. The importing counties contained 50 percent of the State's population and water importation related more to population than to internal water-supply sources.

INTRODUCTION

With the exception of domestic users, all water users in Oklahoma are required to report their withdrawals annually to the Oklahoma Water Resources Board. These reports are required from users who withdraw from original sources, but are not required for water purchased from other sources, such as water suppliers. The location reported is the actual point of withdrawal from the ground-water or surface-water source.

Withdrawal information has been published annually, beginning with the 1969 data, in the Oklahoma Water Resources Board series "(year) Reported Water Use in Oklahoma". The most current year published in this series is 1981 (Oklahoma Water Resources Board, 1984). The data used to produce these publications are only from self-suppliers as required by the provisions of their permits. The reported water use is, however, adjusted to account for those counties that either export or import significant quantities of water. For example, Oklahoma County (fig. 1) obtains a significant part of its water from a surface-water source in Atoka County. Water use is reported for categories such as irrigation, public water supply, industrial, and oil and gas production. Because of the importance of agriculture to the State's economy, the irrigation data is further divided into crop types and acres irrigated. Information also is provided on irrigation-system types and power used for irrigation.

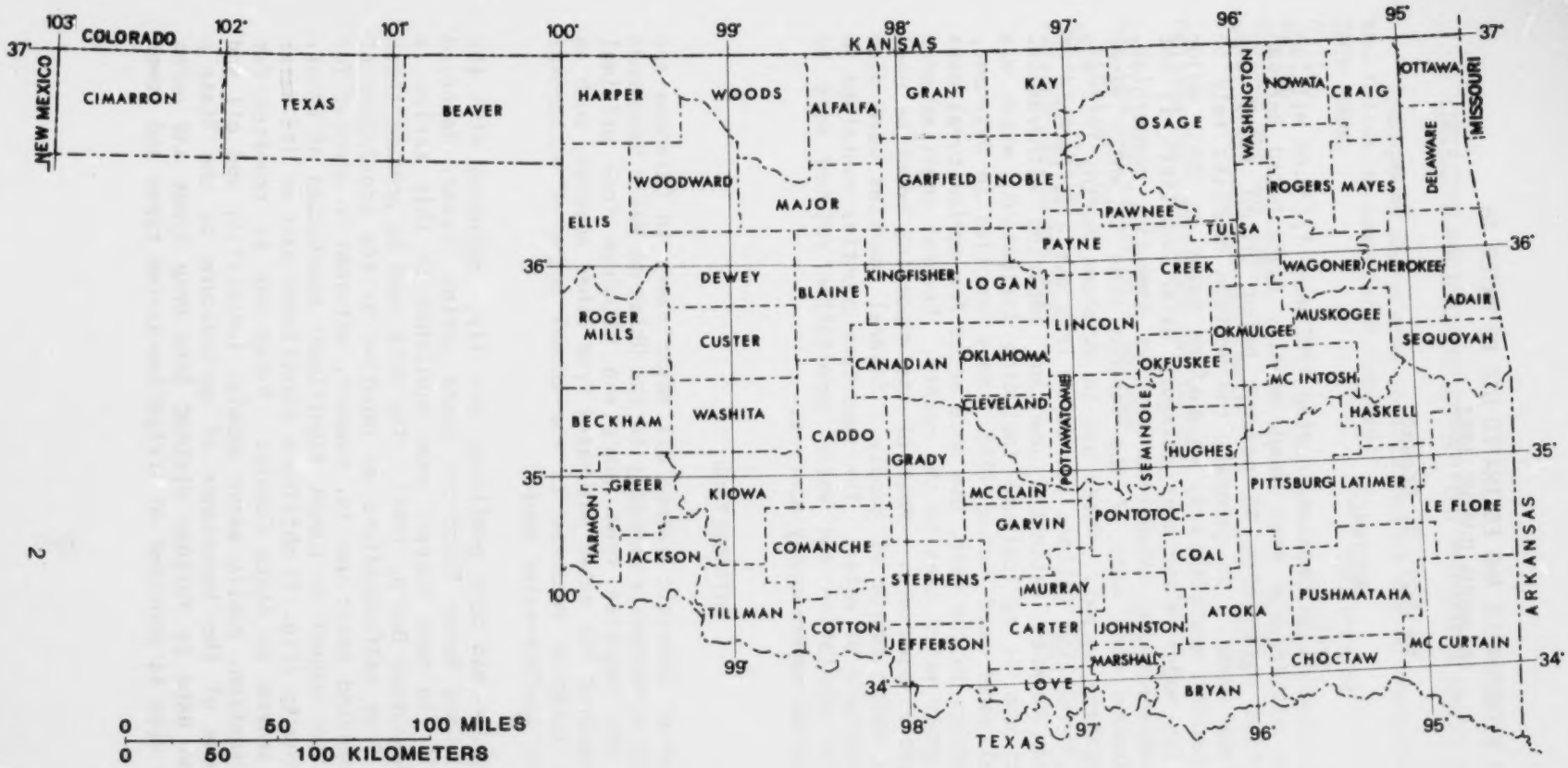


Figure 1.--Counties in Oklahoma.

In the Oklahoma Water Resources Board reports, the water-supplier (public-water supply) category is not divided into the various uses such as domestic, commercial, and industrial, since this data, as of 1982, has not been readily available from the public-water suppliers. As a result commercial and industrial reported use reflects only self-supplied use and usually is less than the actual use; also no domestic use is reported.

The intent of this report is to supplement the information provided in the Oklahoma Water Resources Board Reported Water Use series. The information provided is intended to show the relation between ground- and surface-water withdrawals, the relation between reported withdrawal and estimated use, and the relative importance of various water uses on a statewide and a county basis. The author wishes to acknowledge the assistance of James Schuelein of the Oklahoma Water Resources Board who provided suggestions on the format of the report.

DEFINITIONS

The following definitions are provided to avoid confusion in their application in this report.

General Definitions

AGRICULTURAL-NONIRRICATION WATER USE--Water used for stock watering, feed lots, dairy operations, and other on-farm needs. Does not include rural-domestic water use or irrigation water use.

COMMERICAL WATER USE--Water used by motels, hotels, restaurants, office buildings, commercial facilities, and institutions both civilian and military. The water may be obtained from a public supply or be self supplied.

DOMESTIC WATER USE--Water used for normal household purposes, such as drinking, food preparation, bathing, washing clothes and dishes, flushing toilets, and watering lawns and gardens. Also called residential water use. The water may be obtained from a public supply or may be self supplied.

INDUSTRIAL WATER USE--Water used for thermoelectric power (electricity generation) and other industrial uses such as steel, chemical and allied products, paper and allied products, mining, and petroleum refining. The water may be obtained from a public supply or may be self supplied.

IRRIGATION WATER USE--Artificial application of water on lands to assist in the growing of crops and pastures or maintaining recreational lands such as parks and golf courses.

LOSSES--Water lost due to system leakage, water-main breaks, and all other unaccounted-for water. Generally applied to public-water supplies.

MILLION GALLONS PER DAY (mgd)--A rate of flow of water.

PER CAPITA USE, GALLONS PER CAPITA PER DAY (GPCD)--The average quantity of water used per person per day.

PUBLIC SUPPLY--Water withdrawn for all use by public and private water suppliers and delivered to users that do not supply their own water. Water suppliers provide water for a variety of uses such as domestic, commercial, industrial, and public water use.

PUBLIC WATER USE--Water supplied from a public supply and used for firefighting, street washing, municipal parks, and swimming pools.

SELF-SUPPLIED WATER--Water withdrawn from a surface- or ground-water source by a user and not obtained from a public supply.

WITHDRAWAL--Water removed from the ground or diverted from a surface-water source for use.

Specific Definitions

AGRICULTURAL USE--The total quantity of water used for all agricultural purposes including irrigation.

GALLONS PER SQUARE MILE PER DAY--A measure of the areal intensity of water use or withdrawal.

POPULATION DENSITY--The average number of persons residing in a given area. Normally expressed in persons per square mile.

PUBLIC USE AND LOSSES--The total quantity of water used in the public use and loss categories.

REPORTED WITHDRAWALS

The reported withdrawals given in this report are aggregations by county of the reported point source data stored in the Oklahoma State Water Use Data System. This data base is managed and operated by the Oklahoma Water Resources Board. In addition, the reported withdrawals are increased by the estimated withdrawal for self-supplied domestic use in each county (not required to be reported). The estimated water withdrawn for self-supplied domestic use in Oklahoma is 56 gallons per capita per day (GPCD) (Stoner,1984). The total daily rate for each county, in millions of gallons per day, (mgd) for self-supplied domestic use was determined by multiplying the 1982 estimated county self-supplied populations by the GPCD. The domestic self-supplied populations for each county were estimated by adjusting the 1980 self-supplied population (Stoner, 1984) with the estimated 1982 populations provided by the Oklahoma Employment Security Commission (written commun., 1984). The population estimates used for this report are the preliminary July 1, 1982 estimates prepared in January 1983. The source of self-supplied domestic water was assumed to be ground water because the percentage of households which are self supplied from surface-water sources is thought to be extremely small. The assumption of 100 percent ground-water use by self-supplied domestic users was not considered to create any significant error.

The statewide reported withdrawal of water from ground- and surface-water sources during 1982 was 1,270.64 mgd. The areal intensity of withdrawal during 1982 was 18,170 $(gal/mi^2)/d$. Ground-water withdrawals in the State accounted for 46 percent (580.49 mgd) and surface-water withdrawals 54 percent (690.15 mgd). Although the statewide distribution is about equal, there is a considerable difference between the counties. The western counties generally use ground water and the eastern counties generally use surface water. With the exception of two counties, Ottawa and Delaware, in northeastern Oklahoma the major ground-water withdrawing counties are in the western part of Oklahoma (fig. 2). Of the 26 counties shown in figure 2, 12 counties withdraw more than 95 percent of their respective total withdrawals as ground water. Those counties are Beaver, Beckham, Cimarron, Dewey, Ellis, Garfield, Greer, Harmon, Major, Ottawa, Texas, and Woods. Except for Comanche, Cotton, Jefferson, and Stephens in southwestern Oklahoma, the major surface-water withdrawing counties are in the eastern part of Oklahoma (fig. 3). Of the 34 counties shown in figure 3, 8 counties withdraw more than 95 percent of their respective totals as surface water. These counties are Atoka, McCurtain, Mayes, Muskogee, Noble, Pawnee, Rogers, and Washington.

Withdrawals varied considerably from county to county and ranged from 0.61 mgd in Nowata County to 190.01 mgd in Texas County with a median value for the counties of 6.74 mgd. The county areas vary considerably and range from 421 mi^2 for Marshall County to 2,307 mi^2 for Osage County (U.S. Department of Agriculture, 1978). The reported withdrawal for Osage County was 17.84 mgd about 2 times greater than the 9.69 mgd reported withdrawn from Murray County, area of 428 mi^2. The areal withdrawal intensity for Osage County was 7,730 $(gal/mi^2)/d$ and for Murray County was 22,640 $(gal/mi^2)/d$. Therefore, even though more water was withdrawn from the largest county, it was withdrawn more intensly in the next to smallest county. The areal withdrawal intensity ranged from 1,060 $(gal/mi^2)/d$ in Nowata County to 163,800 $(gal/mi^2)/d$ in Muskogee County with a median county value of 8,520 $(gal/mi^2)/d$.

The 1982 estimated county populations also varied considerably and ranged from 3,300 in Cimarron County to 585,600 in Oklahoma County. From the smallest to the largest county population there was a more than 175-fold difference. However, water withdrawn from Cimarron County was 44.38 mgd and from Oklahoma County was 84.21 mgd or less than a two-fold difference. The population intensity ranged from 1.8 persons per square mile in Cimarron County to 833.7 persons per square mile in Tulsa County with a county median value of 26.2 persons per square mile. Withdrawals per person ranged from 34 GPCD in Tulsa County to 13,448 GPCD in Cimarron County with a county median value of 264 GPCD.

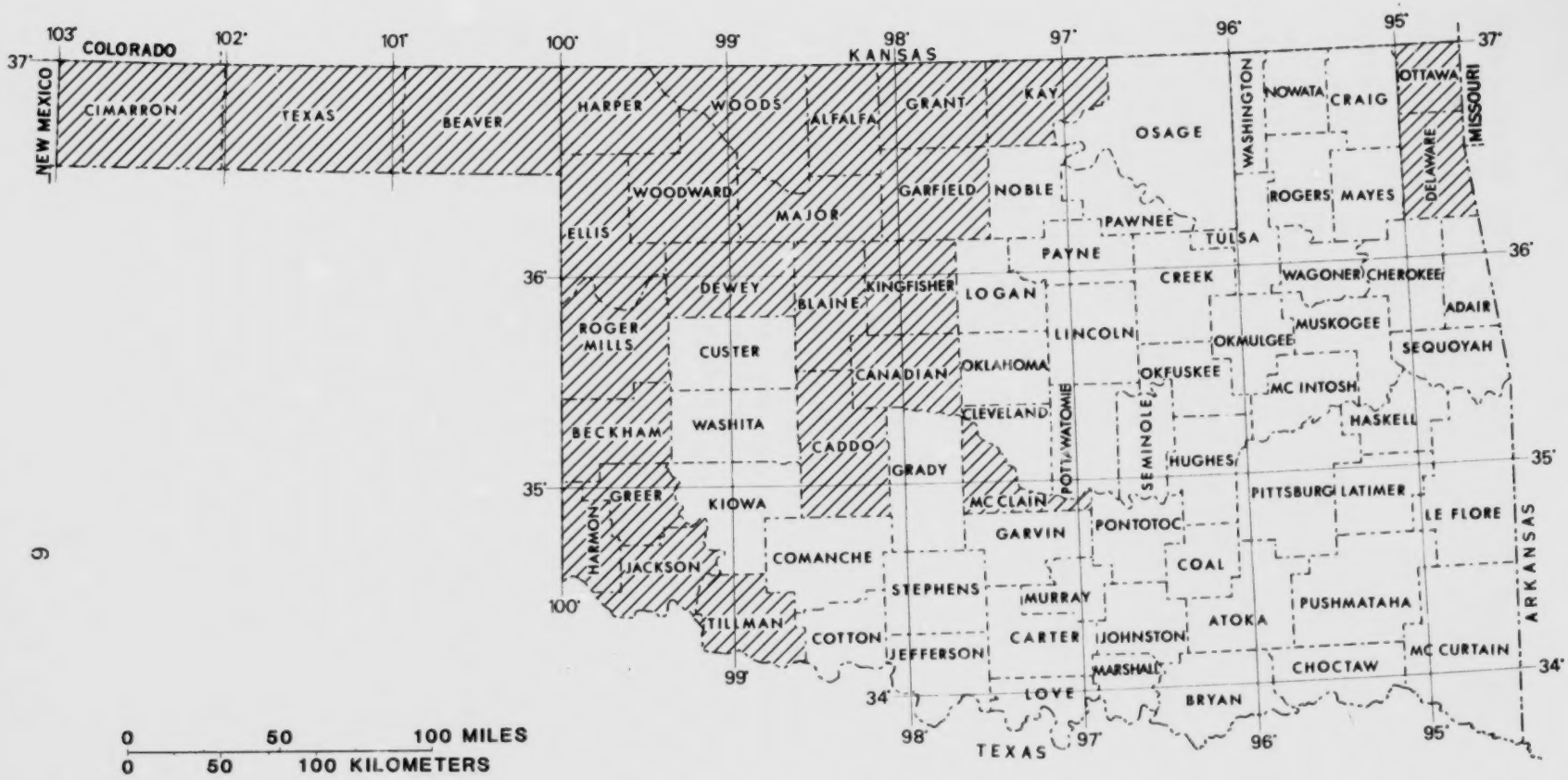


Figure 2.--Counties (shaded) for which ground-water withdrawals were equal to or greater than 75 percent of the total county withdrawal.

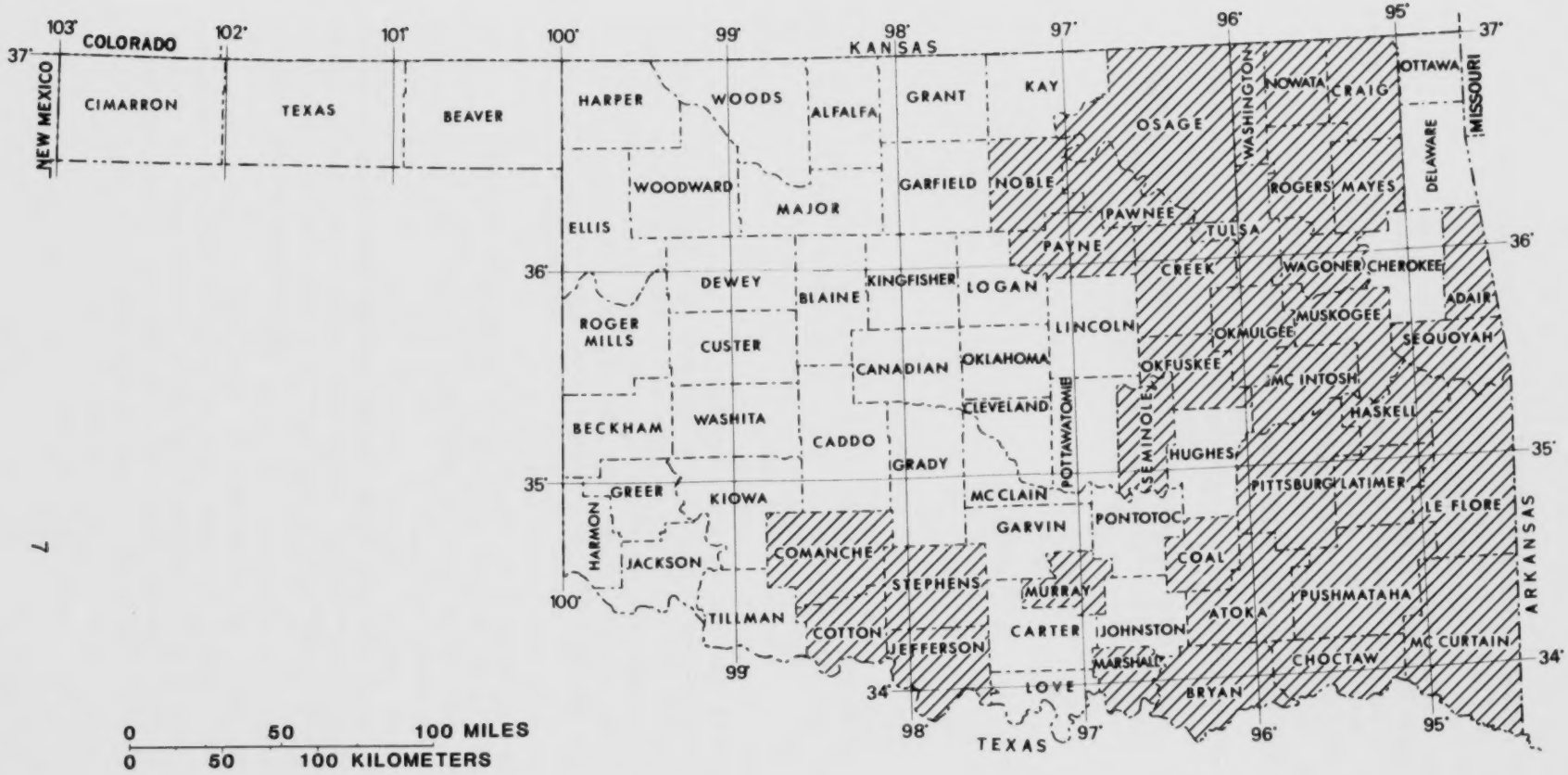


Figure 3.--Counties (shaded) for which surface-water withdrawals were equal to or greater than 75 percent of the total county withdrawal.

ESTIMATED USE

Methods

The estimated use was determined because water withdrawals within a county do not necessarily correspond to water use in the county and water withdrawn by water suppliers was not subdivided into the various use categories. Water provided by water suppliers can be distributed into five use categories. The following table shows these use categories, and the national ranges and averages (Fair, Geyer, and Okun, 1971):

Use	Range (gallons per capita per day)	Average (gallons per capita per day)
Domestic	20 - 90	55
Commercial	10 - 130	20
Industrial	20 - 80	50
Public	5 - 20	10
Losses	5 - 30	15
Total	80 - 250	150

The table shows the average rate of water use per person for all the public supplies considered was 150 gpd. The 1982 estimated public-supplied population of 2,741,540 persons was determined by updating the 1980 public-supplied population (Stoner, 1984) using the 1982 population estimates provided by the Oklahoma Employment Security Commission. The total reported statewide 1982 withdrawal for water suppliers was 455.59 mgd. Dividing the estimated public-supplied population into the reported withdrawal resulted in a rate of 166 GPCD. Due to the lack of any data supporting the unequal weighting of any of the categories in the table, the average GPCD values were adjusted upwards by equal weighting so that the sum of the values equalled 166 GPCD. The values determined, in gallons per capita per day, were: domestic 61, commercial 22, industrial 55, public 11, and losses 17. Each of the adjusted values was well within the individual ranges shown in the table. The self-supplied domestic water-use rate for 1980 had been estimated to be 56 GPCD (Stoner, 1984). There was no evidence to support any change in this rate, therefore it was not changed and 56 GPCD was used as the self-supplied domestic rate in this report.

To estimate water use in the counties it was assumed that water reported withdrawn by self-supplied commercial concerns, industries, agricultural users, and irrigators was used within the county of withdrawal. This assumption was considered to be reasonably valid because economic factors generally limit transportation distances for these users. Some errors could be introduced where the point of withdrawal is near the county boundary and the water is transported a short distance into an adjacent county. However, it was believed that the errors introduced in this manner were no greater than the errors in the self-supplied reported data and the values estimated from the water-supplier data and would not constitute any significant bias in the estimated uses.

Five use categories were selected for presentation in this report. The public and losses categories were combined into one use category. The agricultural use category includes irrigation as well as all other agricultural uses. The commercial and industrial use values are the estimated values from water supplies plus any self-supplied withdrawals in the county. The use values were determined as follows:

DOMESTIC: (56 GPCD) X (self-supplied population) + (61 GPCD) X (public-supplied population)
COMMERCIAL: (22 GPCD) X (county public-supplied population) + (reported self-supplied withdrawal)
INDUSTRIAL: (55 GPCD) X (county public-supplied population) + (reported self-supplied withdrawal)
PUBLIC AND LOSSES: (28 GPCD) X (county public-supplied population)
AGRICULTURAL: (reported agricultural and irrigation withdrawals)

Results

Water for agriculture and irrigation is the dominant water use in Oklahoma. Dominant is defined in this report as the greatest single use in the area under consideration. Agriculture, including irrigation, accounted for 42 percent of the water used in Oklahoma during 1982. The second largest water use, 32 percent, was water for industrial purposes. The major water using industries in Oklahoma during 1982 were fossil-fueled power generation and pulp and paper production. Together agriculture and industry accounted for 74 percent of the water used in Oklahoma during 1982. There were no counties in Oklahoma for which commercial use or public use and losses dominated.

During 1982 there were 25 counties for which domestic use was the dominant use (fig. 4). Many of these counties are adjacent to the major population centers of Oklahoma and Tulsa Counties. There were 15 counties in Oklahoma for which industry was the dominant water use in 1982 (fig. 5). These counties were in the eastern one-half of the State. The two most populated counties, Oklahoma and Tulsa, were among the dominant industrial water-using counties.

Agriculture dominated water use in 36 counties (fig. 6). Of the 36 counties, 24 counties used more water for agrigultural purposes than the total of all other water uses in those counties, (fig. 7). As a reflection of the importance of agriculture to Oklahoma there were 10 counties, Beaver, Caddo, Cimarron, Ellis, Harmon, Harper, Major, Roger Mills, Texas, and Tillman, whose 1982 agricultural water use was equal to or greater than 80 percent of their respective total county water use. These 10 counties accounted for 32 percent of the total State water use but represented only 3 percent of the population.

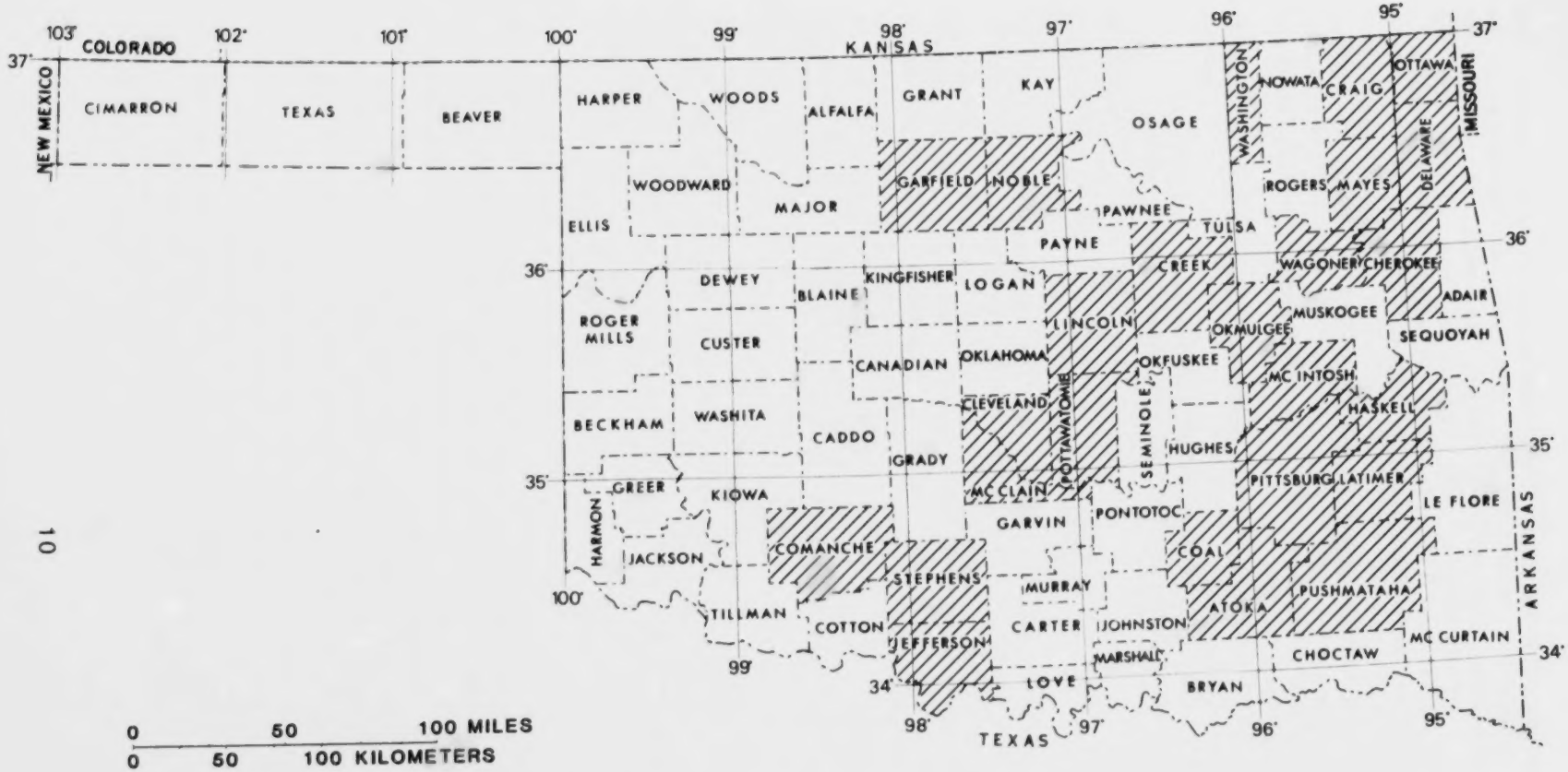


Figure 4.--Counties (shaded) for which domestic use was the dominant use.

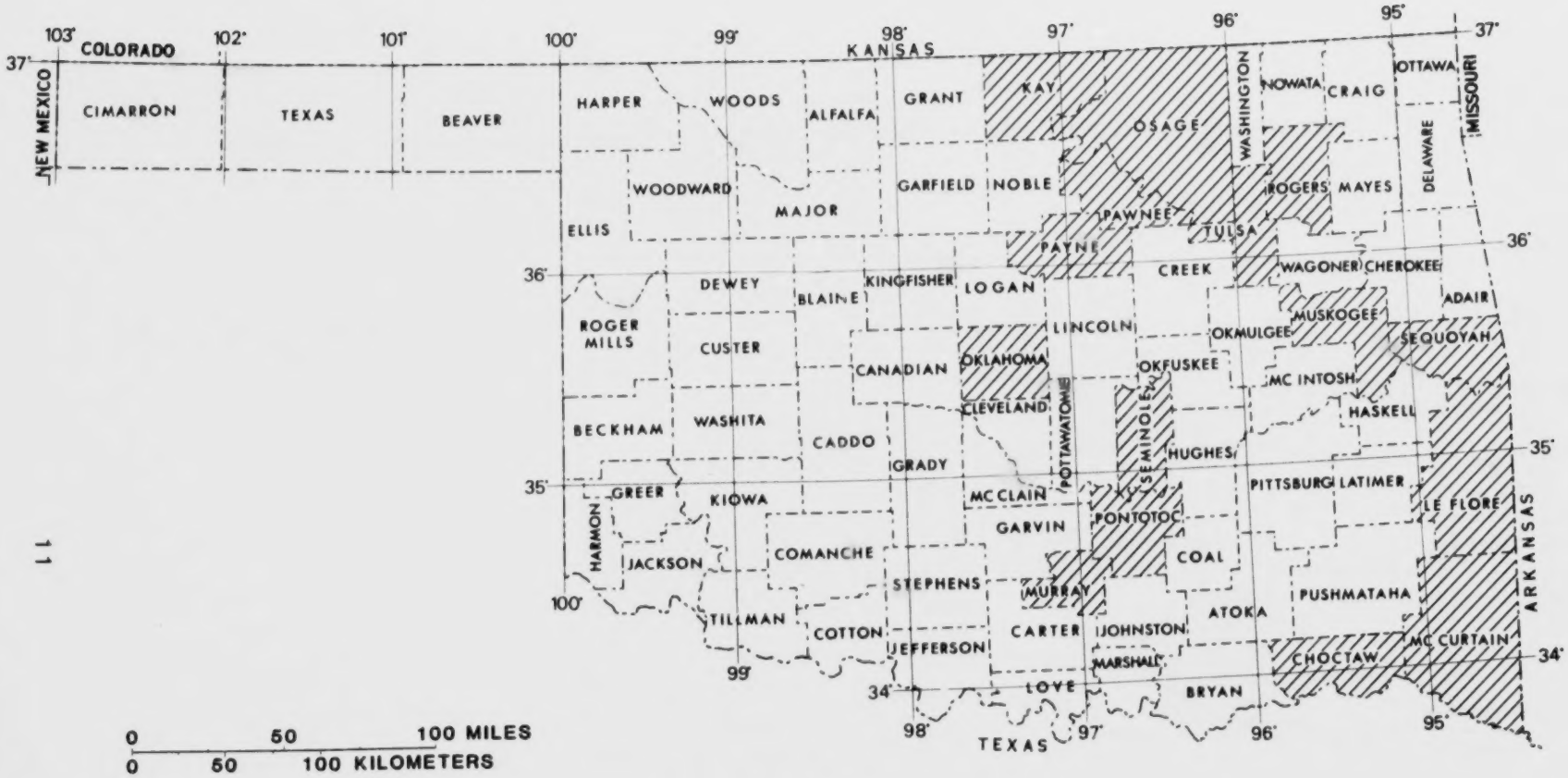


Figure 5.--Counties (shaded) for which industrial use was the dominant use.

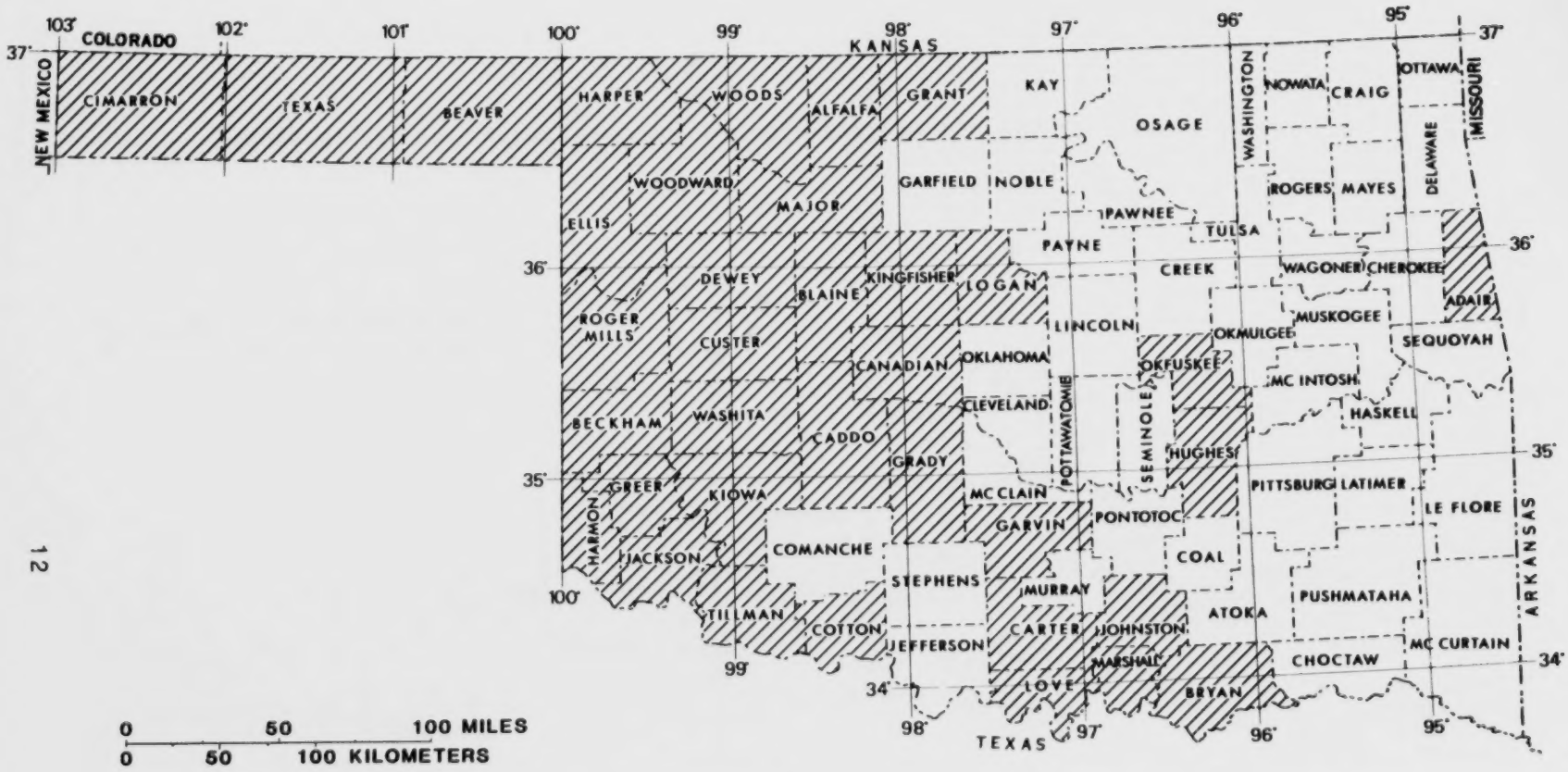


Figure 6.--Counties (shaded) for which agricultural use was the dominant use.

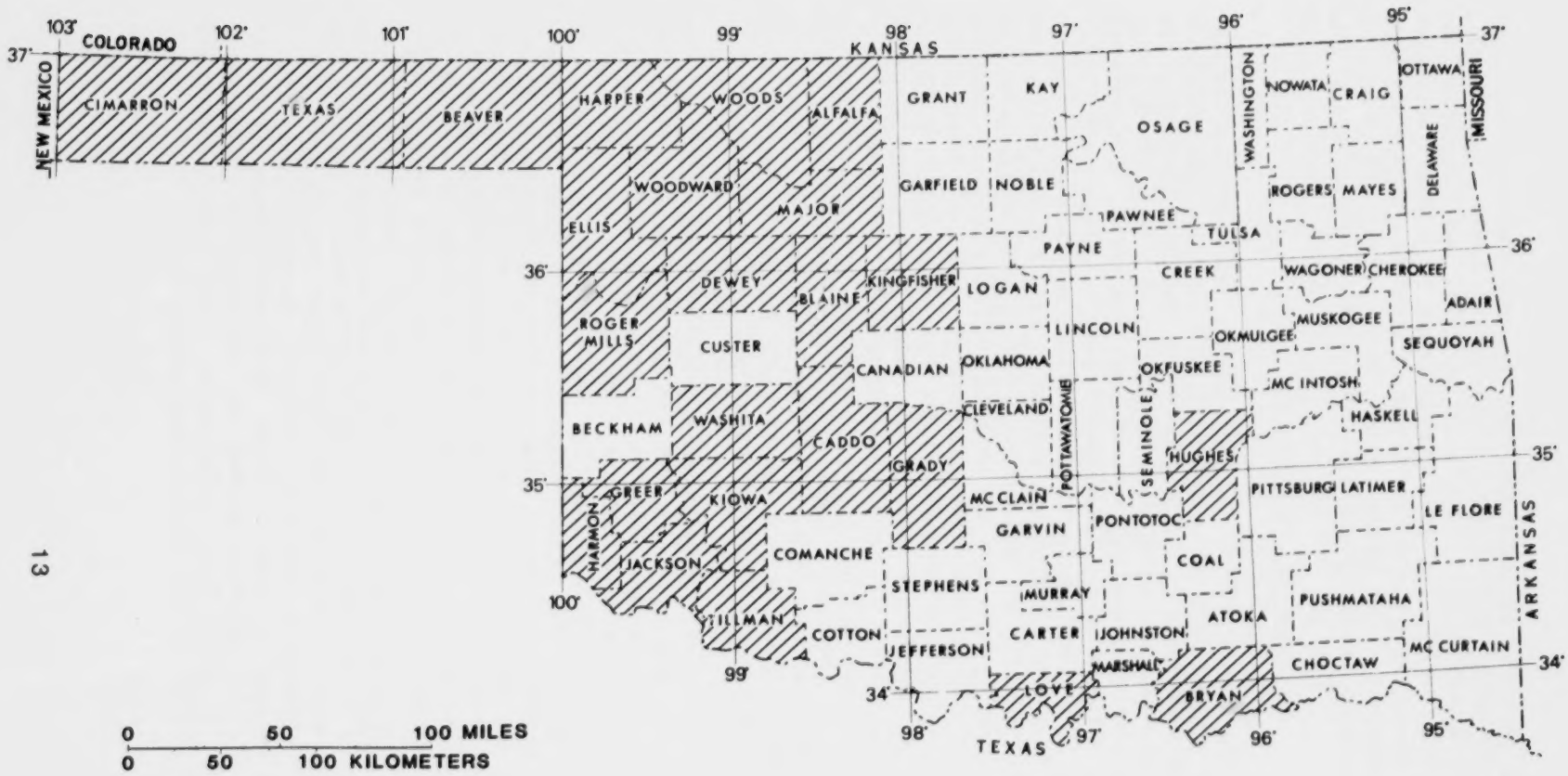


Figure 7.--Counties (shaded) for which agricultural use was equal to or greater than the sum of all other uses in the county.

The dominant water uses, agriculture, industry, and domestic, accounted for 92 percent of the water used in the State during 1982. In general, agricultural water use dominates in the west (fig. 6) and industrial and domestic water use dominates in the east (figs. 4 and 5). Total estimated statewide water use during 1982 was 1,270.14 mgd of which 521.14 mgd was used for agricultural purposes. The other major water uses, domestic and industrial, were estimated to use 191.62 mgd and 411.38 mgd respectively.

SURPLUSES AND DEFICITS

During 1982 every county except Cimarron County had either a surplus (reported withdrawal greater than estimated use) or a deficit (estimated use greater than reported withdrawal). Aside from those counties that are major importers or are major exporters of water there are several reasons for these imbalances. Many withdrawals are not metered and, therefore, the reported values are estimates. For example, irrigators generally do not meter their water sources but use other methods to determine withdrawal such as the rated application volumes from their irrigation systems. Many water suppliers do not have master meters on their systems and report their withdrawals based on some estimation technique or from the sum obtained from their users' meters, which does not account for losses. The estimate of water use from public suppliers and for self-supplied domestic users was based on a statewide average. There are not sufficient data or any relationships from which to develop per capita use rates by county or to divide the public-supply withdrawal into the various categories by individual county. Errors in instrument readings affect the values reported by users. Finally, many rural water systems cover parts of two or more counties (Oklahoma Water Resources Board, 1980) and depending upon the location of their sources of supply, they may transport water across county lines creating surpluses or deficits.

The surplus and deficit values indicated a break at about 3.00 mgd. Of the 27 counties which had a surplus, 18 counties had a surplus of less than 3.00 mgd surplus and 9 counties had a surplus greater than 3.00 mgd. There were no counties that had a surplus between 2.00 and 2.99 mgd. Of the 49 counties that indicated a deficit, 36 counties had a deficit less than 3.00 mgd and 13 counties had a deficit greater than 3.00 mgd. There were only 3 counties, Beckham, Cherokee, and Creek, that had deficits between 2.00 and 2.99 mgd. Data were not readily available to determine whether these three counties were major importers. Therefore, for the purpose of this report, a major exporting or importing county was defined as having a surplus or deficit equal to or greater than 3.00 mgd. In 1982 there were 9 major exporting counties (fig. 8). With the exception of Caddo and Custer Counties, all of the major exporting counties had surface-water withdrawals greater than or equal to 75 percent of their total withdrawals (fig. 3). For the same period, there were 13 counties that were major importers of water (fig. 9). Of the 13 importing counties, Garfield, Canadian, and Jackson Counties withdrew 75 percent or more of their total withdrawals as ground water. The other 10 counties withdrew neither surface water nor ground water in excess of 75 percent of their total withdrawals. The 13 major importing counties contained 53 percent of the State's population.

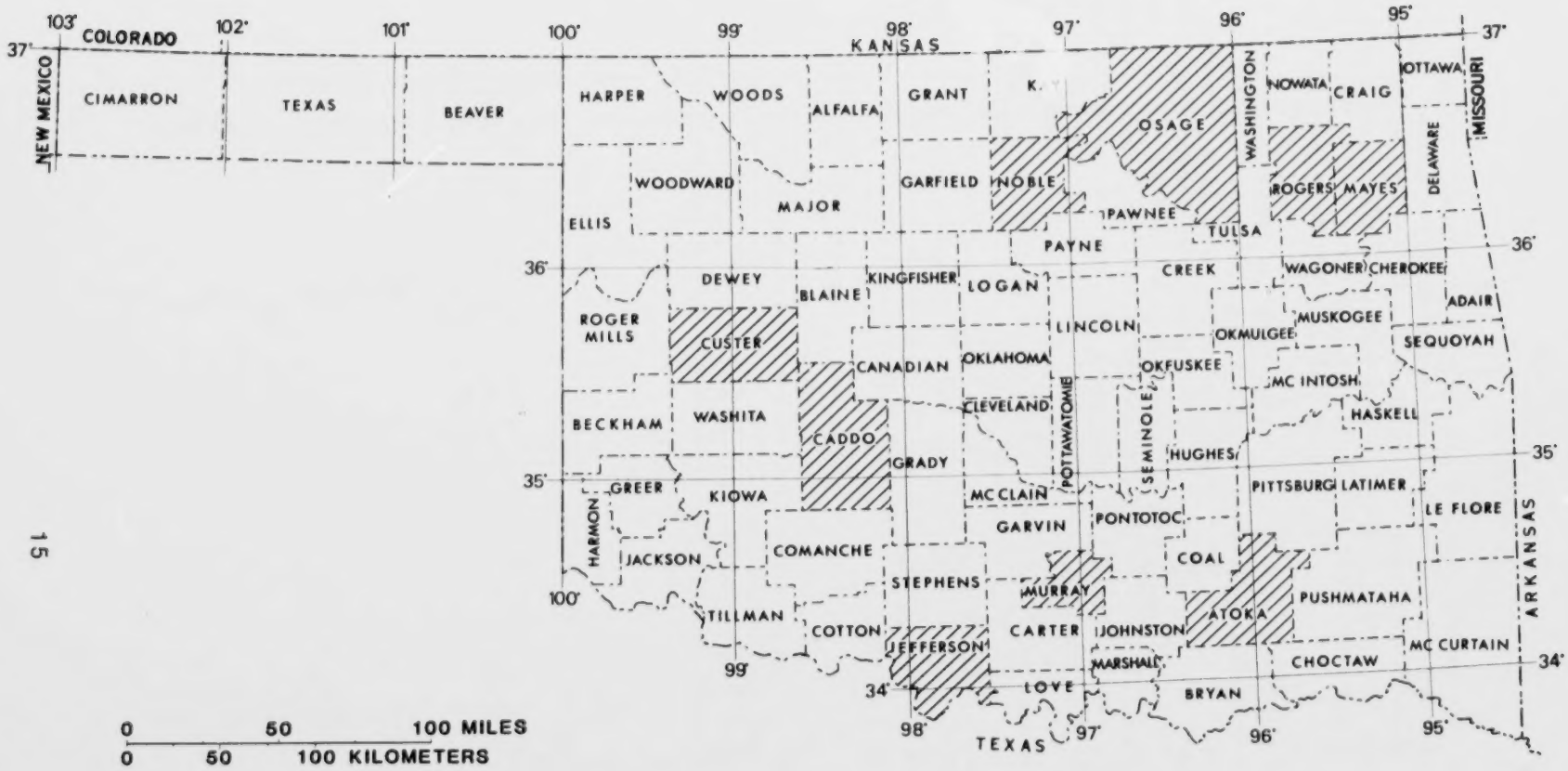


Figure 8.--Counties (shaded) for which the water surplus was equal to or greater than 3.00 million gallons per day.

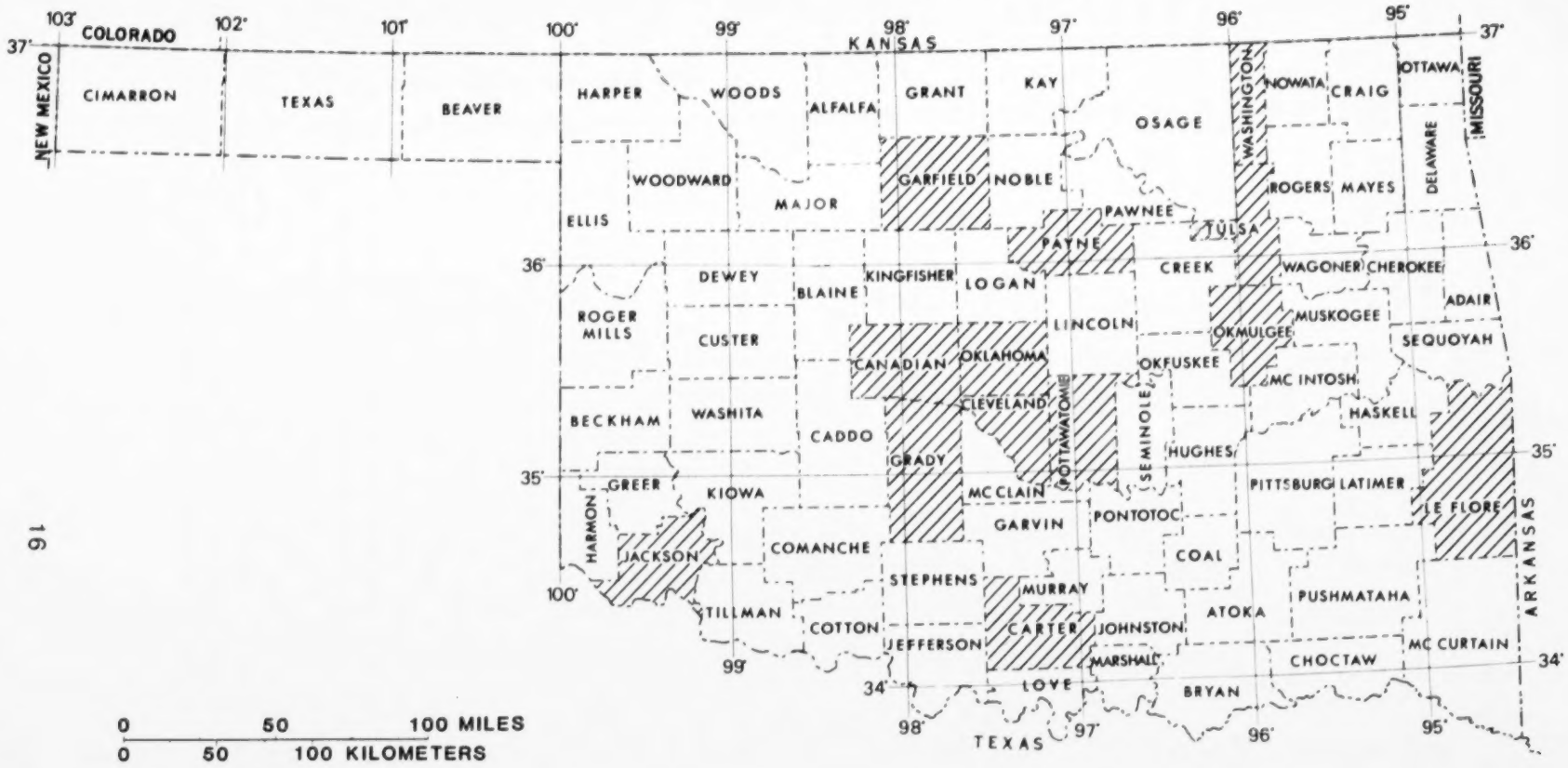


Figure 9.--Counties (shaded) for which the water deficit was equal to or greater than 3.00 million gallons per day.

SUMMARY

Reported water withdrawals in Oklahoma during 1982 were about equally divided between surface water and ground water. Ground-water withdrawals were 580.44 mgd or 46 percent of the total withdrawals and surface-water withdrawals were 690.15 mgd or 54 percent. Most of the ground water was withdrawn in the western one-half of the State and most of the surface water was withdrawn from the eastern one-half.

The withdrawal data for water suppliers were not further subdivided into the various use classes such as domestic, industrial, and commercial. Therefore, estimates were determined for each of four use categories; domestic, commercial, industrial, and public use and losses. The use rate for the public-supplied population for 1982 was 166 GPCD, which was slightly greater than the national average of 150 GPCD (Fair, Geyer, and Okun, 1971). The national average use rates for each of the four use categories were adjusted upward so that their total was equal to 166 GPCD. The adjusted values in GPCD; domestic 61, commercial 22, industrial 55, and public use and losses 28, were well within the reported range for each of these categories. Agricultural use of water was the dominant use during 1982 and accounted for 42 percent of the total State water use. The second largest use category was industrial and accounted for 32 percent of the total State water use. The major water-using industries during 1982 were fossil-fueled electric-power generation and pulp and paper production.

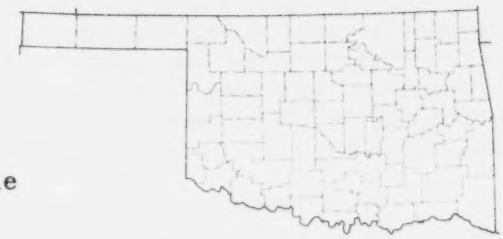
Because the estimated-use values were based on a statewide average use rate rather than individual county-use rates, there were differences in the county reported withdrawals and estimated-use values. There were 22 counties whose differences (surplus or deficit) were greater than could be explained by errors in reported or estimated values. Of these counties, 9 were identified as major water exporters and 13 were identified as major water importers.

STATE AND COUNTY DATA

The following section contains the individual data for the State and for each of the counties. The data are in the same format and the terms are the same as those previously defined.

STATEWIDE

Area: 69,919 square miles
Population
Public Supplied: 2,741,540
Self Supplied: 435,460
Total: 3,177,000
Density: 45.4 persons per square mile

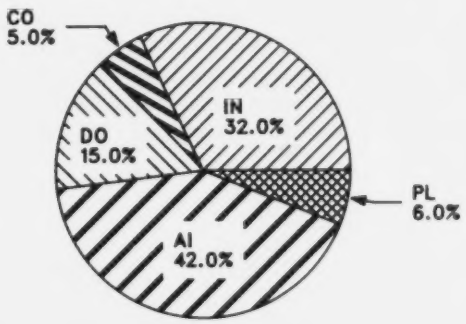


REPORTED WITHDRAWAL
(in million gallons per day)

Ground water (GW)	580.49
Surface water (SW)	690.15
Total	1,270.64

ESTIMATED USE
(in million gallons per day)

Domestic (DO)	191.62
Commercial (CO)	69.24
Industrial (IN)	411.38
Public and Losses (PL)	76.76
Agricultural (AI)	521.14
Total	1,270.14

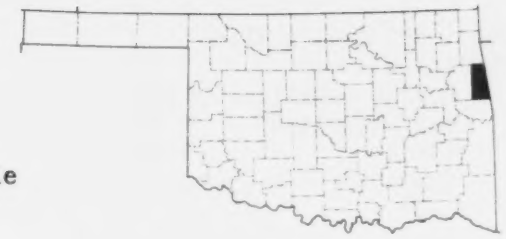


RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	1,270.64	400	18,170
Estimated use	1,270.14	400	
Surplus (deficit)	.50	0	

ADAIR COUNTY

Area: 570 square miles
Population
Public Supplied: 11,570
Self Supplied: 6,430
Total: 17,800
Density: 31.2 persons per square mile

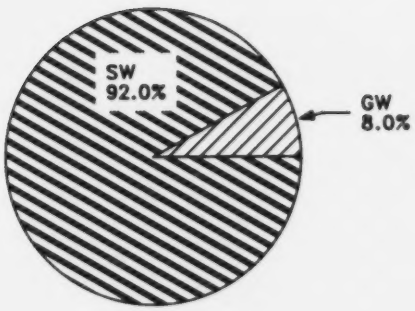


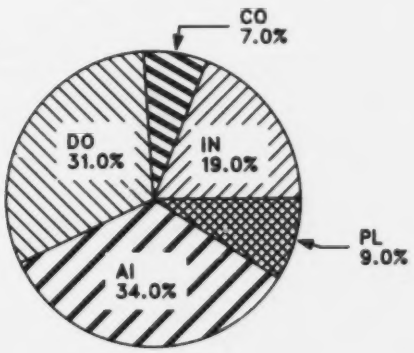
REPORTED WITHDRAWAL
(in million gallons per day)

Ground water (GW)	0.38
Surface water (SW)	4.48
Total	4.86

ESTIMATED USE
(in million gallons per day)

Domestic (DO)	1.07
Commercial (CO)	.25
Industrial (IN)	.66
Public and Losses (PL)	.32
Agricultural (AI)	1.12
Total	3.42



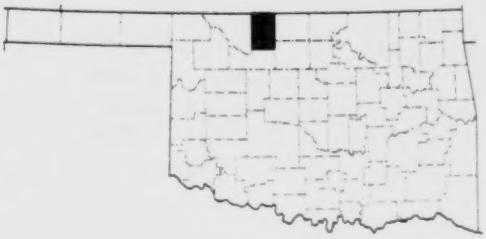


RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	4.86	273	8,530
Estimated use	3.42	192	
Surplus (deficit)	1.44	81	

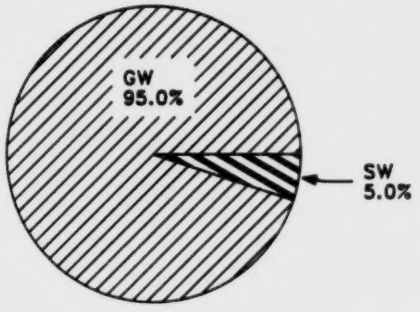
ALFALFA COUNTY

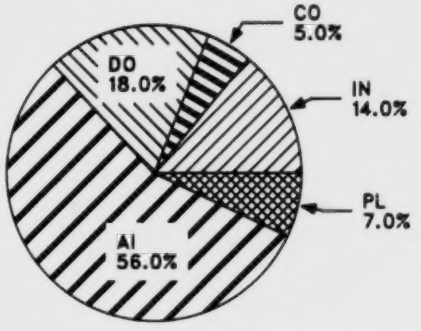
Area: 885 square miles
Population
Public Supplied: 6,050
Self Supplied: 1,350
Total: 7,500
Density: 8.4 persons per square mile



REPORTED WITHDRAWAL (in million gallons per day)	
Ground water (GW)	2.89
Surface water (SW)	.16
Total	3.05

ESTIMATED USE (in million gallons per day)	
Domestic (DO)	0.44
Commercial (CO)	.13
Industrial (IN)	.34
Public and Losses (PL)	.17
Agricultural (AI)	1.32
Total	2.40

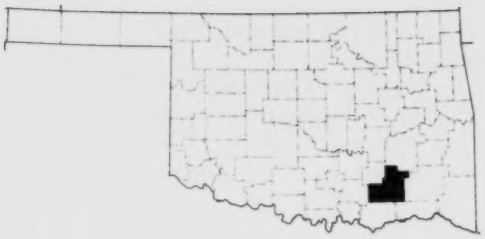




	RATES		
	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	3.05	412	3,450
Estimated use	2.40	320	
Surplus (deficit)	.65	92	

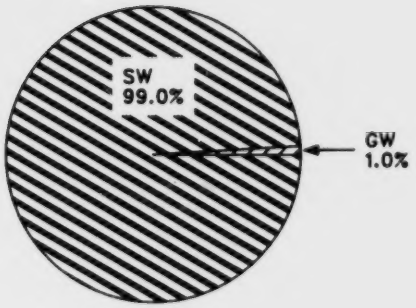
ATOKA COUNTY

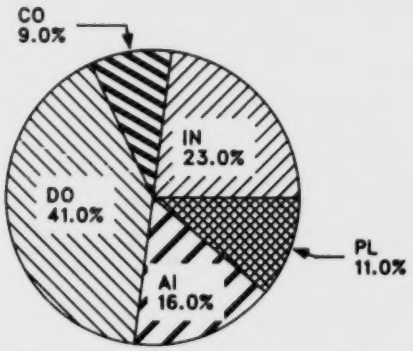
Area: 992 square miles
Population
- Public Supplied: 7,190
- Self Supplied: 4,810
- Total: 12,000
- Density: 12.1 persons per square mile



REPORTED WITHDRAWAL (in million gallons per day)	
Ground water (GW)	0.32
Surface water (SW)	56.23
Total	56.55

ESTIMATED USE (in million gallons per day)	
Domestic (DO)	0.71
Commercial (CO)	.16
Industrial (IN)	.40
Public and Losses (PL)	.20
Agricultural (AI)	.29
Total	1.76





RATES

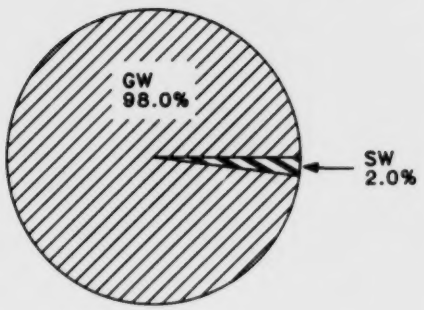
	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	56.55	4,712	57,010
Estimated use	1.76	147	
Surplus (deficit)	54.79	4,565	

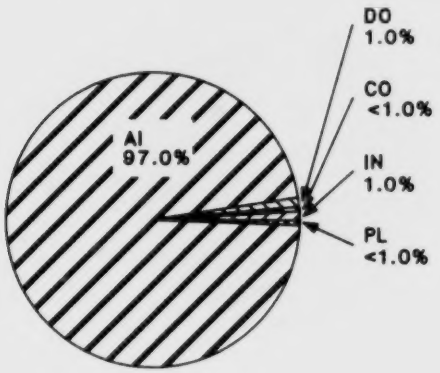
BEAVER COUNTY

Area: 1,798 square miles
Population
Public Supplied: 3,950
Self Supplied: 3,650
Total: 7,600
Density: 4.2 persons per square mile

REPORTED WITHDRAWAL (in million gallons per day)	
Ground water (GW)	29.54
Surface water (SW)	.48
Total	30.02

ESTIMATED USE (in million gallons per day)	
Domestic (DO)	0.45
Commercial (CO)	.11
Industrial (IN)	.38
Public and Losses (PL)	.11
Agricultural (AI)	29.25
Total	30.30



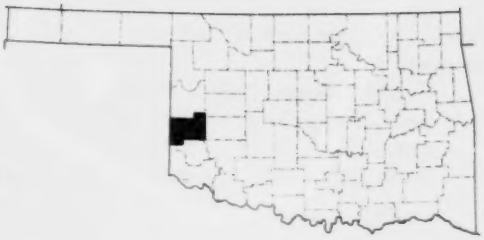


RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	30.02	3,950	16,700
Estimated use	30.30	3,987	
Surplus (deficit)	(.28)	(37)	

BECKHAM COUNTY

Area: 907 square miles
Population
- Public Supplied: 19,270
- Self Supplied: 5,730
- Total: 25,000
- Density: 27.6 persons per square mile

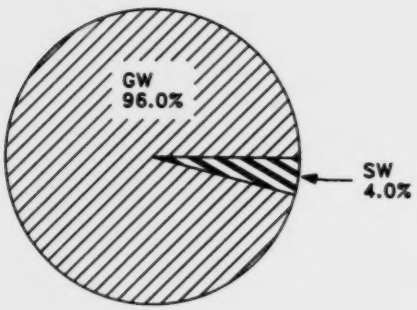


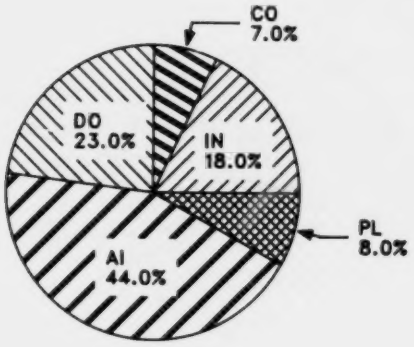
REPORTED WITHDRAWAL
(in million gallons per day)

Ground water (GW)	4.07
Surface water (SW)	.19
Total	4.26

ESTIMATED USE
(in million gallons per day)

Domestic (DO)	1.50
Commercial (CO)	.42
Industrial (IN)	1.15
Public and Losses (PL)	.54
Agricultural (AI)	2.78
Total	6.39



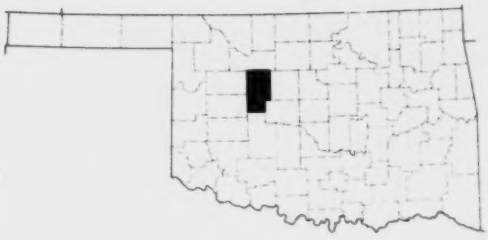


RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	4.26	170	4,700
Estimated use	6.39	256	
Surplus (deficit)	(2.13)	(86)	

BLAINE COUNTY

Area: 932 square miles
Population
- Public Supplied: 10,210
- Self Supplied: 6,090
- Total: 16,300
- Density: 17.5 persons per square mile

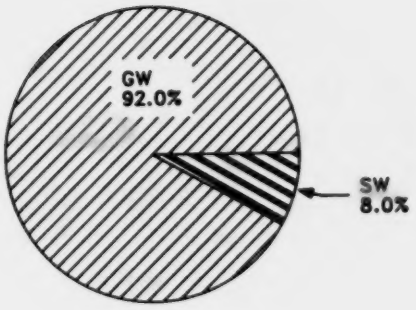


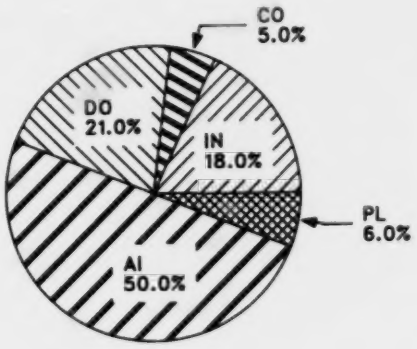
REPORTED WITHDRAWAL
(in million gallons per day)

Ground water (GW)	4.01
Surface water (SW)	.37
Total	4.38

ESTIMATED USE
(in million gallons per day)

Domestic (DO)	0.96
Commercial (CO)	.22
Industrial (IN)	.82
Public and Losses (PL)	.29
Agricultural (AI)	2.35
Total	4.64



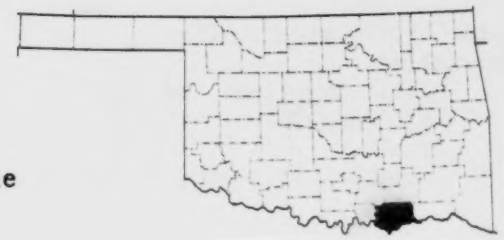


RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	4.38	269	4,700
Estimated use	4.64	285	
Surplus (deficit)	(.26)	(16)	

BRYAN COUNTY

Area: 929 square miles
Population
- Public Supplied: 20,930
- Self Supplied: 10,170
- Total: 31,100
- Density: 33.5 persons per square mile

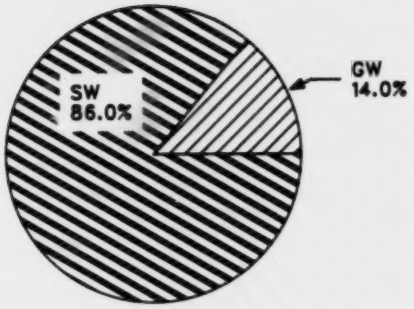


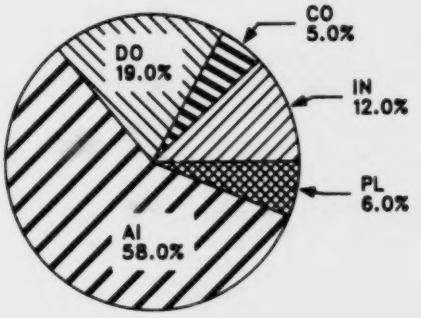
REPORTED WITHDRAWAL
(in million gallons per day)

Ground water (GW)	1.50
Surface water (SW)	8.98
Total	10.48

ESTIMATED USE
(in million gallons per day)

Domestic (DO)	1.85
Commercial (CO)	.46
Industrial (IN)	1.16
Public and Losses (PL)	.59
Agricultural (AI)	5.43
Total	9.49



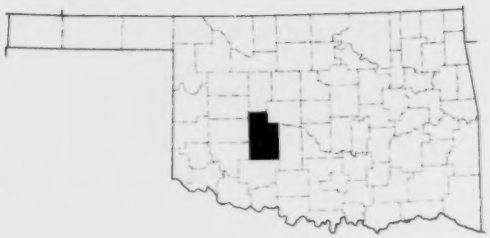


RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	10.48	337	11,280
Estimated use	9.49	305	
Surplus (deficit)	.99	32	

CADDO COUNTY

Area: 1,276 square miles
Population
- Public Supplied: 20,620
- Self Supplied: 11,580
- Total: 32,200
- Density: 25.2 persons per square mile

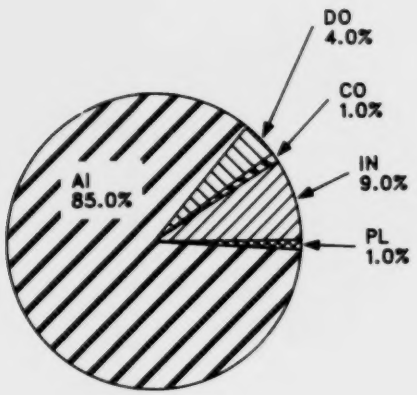


REPORTED WITHDRAWAL
(in million gallons per day)

Ground water (GW)	41.51
Surface water (SW)	13.27
Total	54.78

ESTIMATED USE
(in million gallons per day)

Domestic (DO)	1.91
Commercial (CO)	.45
Industrial (IN)	4.42
Public and Losses (PL)	.58
Agricultural (AI)	40.94
Total	48.30

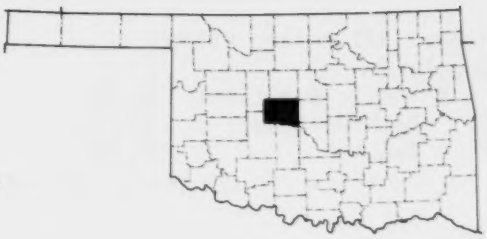


RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	54.78	1,701	42,930
Estimated use	48.30	1,500	
Surplus (deficit)	6.48	201	

CANADIAN COUNTY

Area: 899 square miles
Population
Public Supplied: 59,020
Self Supplied: 4,180
Total: 63,200
Density: 70.3 persons per square mile

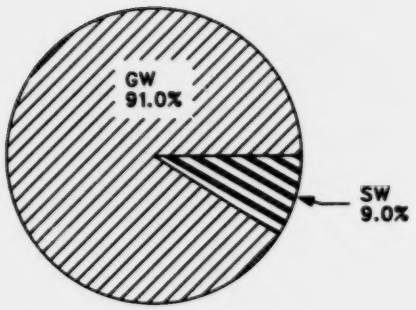


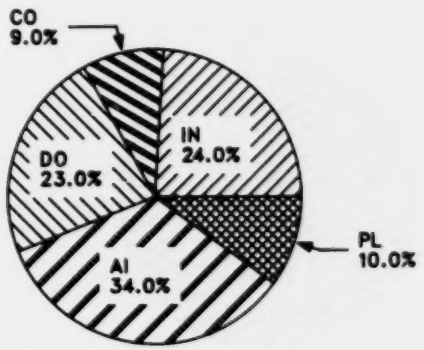
REPORTED WITHDRAWAL
(in million gallons per day)

Ground water (GW)	8.79
Surface water (SW)	.89
Total	9.68

ESTIMATED USE
(in million gallons per day)

Domestic (DO)	3.83
Commercial (CO)	1.53
Industrial (IN)	4.00
Public and Losses (PL)	1.65
Agricultural (AI)	5.96
Total	16.97



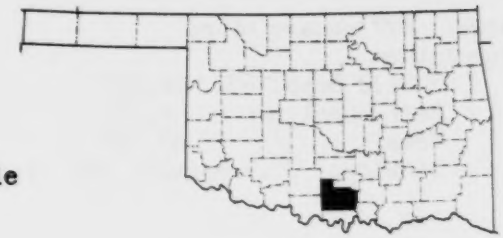


RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	9.68	153	10,770
Estimated use	16.97	269	
Surplus (deficit)	(7.29)	(116)	

CARTER COUNTY

Area: 837 square miles
Population
Public Supplied: 38,350
Self Supplied: 6,650
Total: 45,000
Density: 53.8 persons per square mile

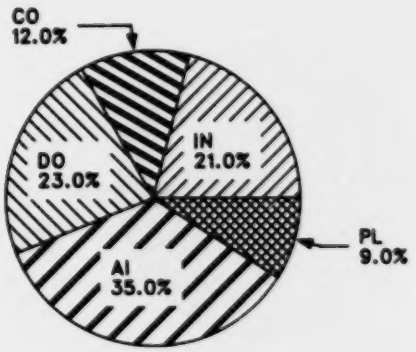


REPORTED WITHDRAWAL
(in million gallons per day)

Ground water (GW)	1.88
Surface water (SW)	5.45
Total	7.33

ESTIMATED USE
(in million gallons per day)

Domestic (DO)	2.71
Commercial (CO)	1.40
Industrial (IN)	2.41
Public and Losses (PL)	1.07
Agricultural (AI)	4.06
Total	11.65

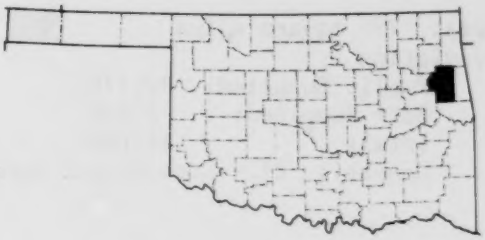


RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	7.33	163	8,760
Estimated use	11.65	259	
Surplus (deficit)	(4.32)	(96)	

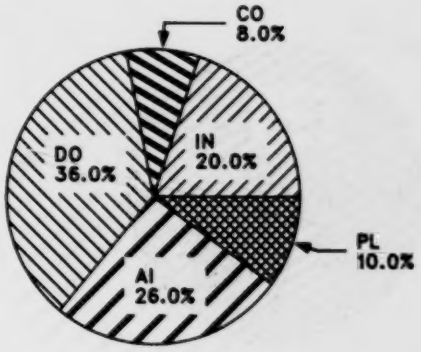
CHEROKEE COUNTY

Area: 784 square miles
Population
- Public Supplied: 18,950
- Self Supplied: 11,850
- Total: 30,800
- Density: 39.3 persons per square mile



REPORTED WITHDRAWAL (in million gallons per day)	
Ground water (GW)	0.71
Surface water (SW)	1.56
Total	2.27

ESTIMATED USE (in million gallons per day)	
Domestic (DO)	1.82
Commercial (CO)	.43
Industrial (IN)	1.05
Public and Losses (PL)	.53
Agricultural (AI)	1.35
Total	5.18

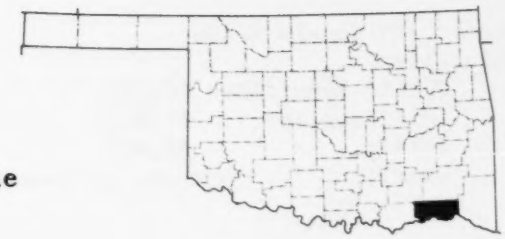


RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	2.27	75	2,900
Estimated use	5.18	168	
Surplus (deficit)	(2.91)	(94)	

CHOCTAW COUNTY

Area: 795 square miles
Population
Public Supplied: 10,370
Self Supplied: 6,630
Total: 17,000
Density: 21.4 persons per square mile

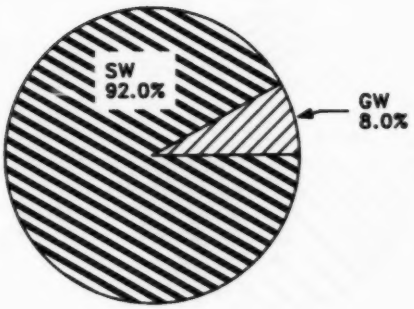


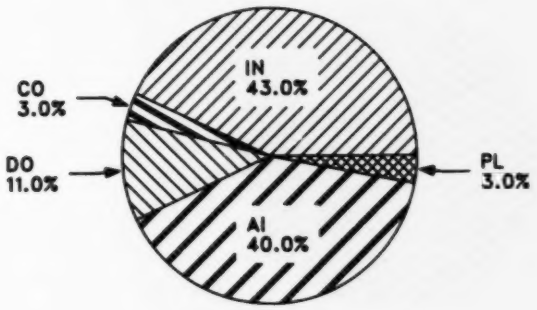
REPORTED WITHDRAWAL
(in million gallons per day)

Ground water (GW)	0.62
Surface water (SW)	7.41
Total	8.03

ESTIMATED USE
(in million gallons per day)

Domestic (DO)	1.00
Commercial (CO)	.23
Industrial (IN)	3.98
Public and Losses (PL)	.29
Agricultural (AI)	3.66
Total	9.16

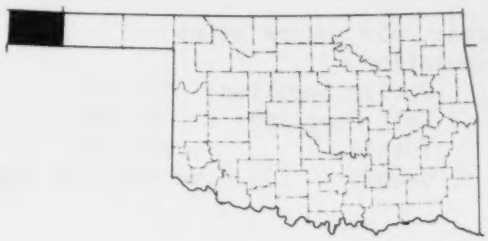




	RATES		
	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	8.03	472	10,100
Estimated use	9.16	539	
Surplus (deficit)	(1.13)	(67)	

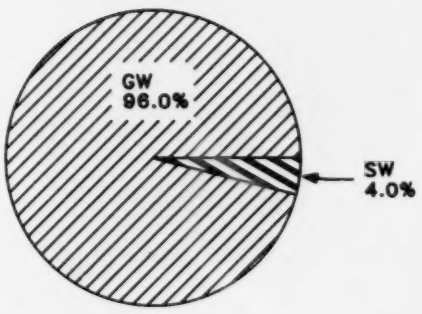
CIMARRON COUNTY

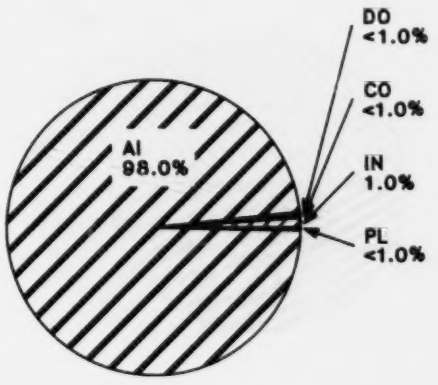
Area: 1,842 square miles
Population
Public Supplied: 2,400
Self Supplied: 900
Total: 3,300
Density: 1.8 persons per square mile



REPORTED WITHDRAWAL (in million gallons per day)	
Ground water (GW)	42.75
Surface water (SW)	1.63
Total	44.38

ESTIMATED USE (in million gallons per day)	
Domestic (DO)	0.20
Commercial (CO)	.05
Industrial (IN)	.23
Public and Losses (PL)	.07
Agricultural (AI)	43.83
Total	44.38



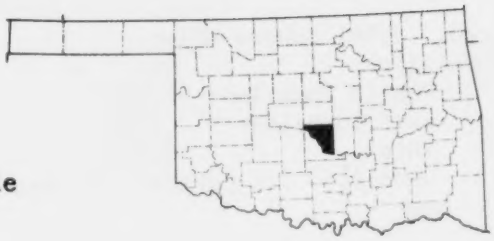


RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	44.38	13,448	24,090
Estimated use	44.38	13,448	
Surplus (deficit)	0	0	

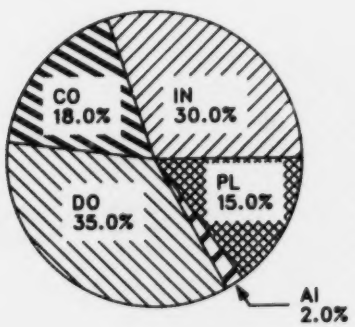
CLEVELAND COUNTY

Area: 559 square miles
Population
Public Supplied: 135,410
Self Supplied: 11,790
Total: 147,200
Density: 263.3 persons per square mile



REPORTED WITHDRAWAL (in million gallons per day)	
Ground water (GW)	11.12
Surface water (SW)	11.18
Total	22.30

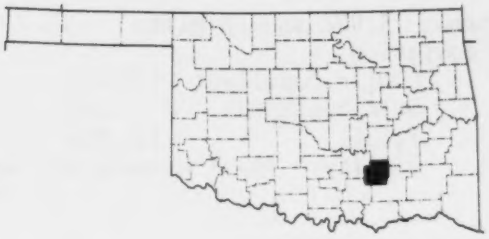
ESTIMATED USE (in million gallons per day)	
Domestic (DO)	8.92
Commercial (CO)	4.59
Industrial (IN)	7.55
Public and Losses (PL)	3.79
Agricultural (AI)	.62
Total	25.47



	RATES		
	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	22.30	151	39,890
Estimated use	25.47	173	
Surplus (deficit)	(3.17)	(22)	

COAL COUNTY

Area: 526 square miles
Population
- Public Supplied: 3,860
- Self Supplied: 1,340
- Total: 5,200
- Density: 9.9 persons per square mile

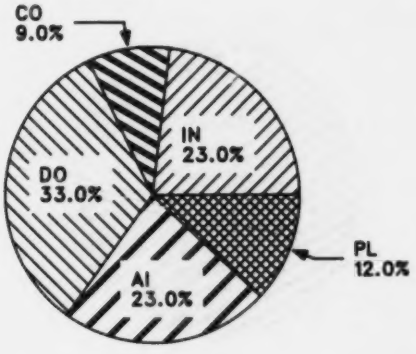


REPORTED WITHDRAWAL
(in million gallons per day)

Ground water (GW)	0.15
Surface water (SW)	.51
Total	.66

ESTIMATED USE
(in million gallons per day)

Domestic (DO)	0.31
Commercial (CO)	.08
Industrial (IN)	.21
Public and Losses (PL)	.11
Agricultural (AI)	.21
Total	.92

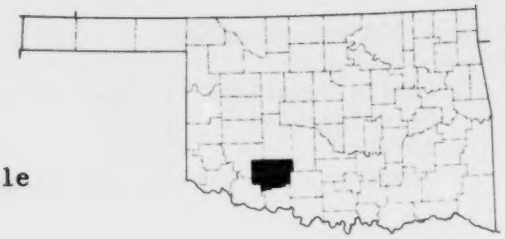


RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	0.66	127	1,250
Estimated use	.92	177	
Surplus (deficit)	(.26)	(50)	

COMANCHE COUNTY

Area: 1,092 square miles
Population
Public Supplied: 112,160
Self Supplied: 640
Total: 112,800
Density: 103.3 persons per square mile

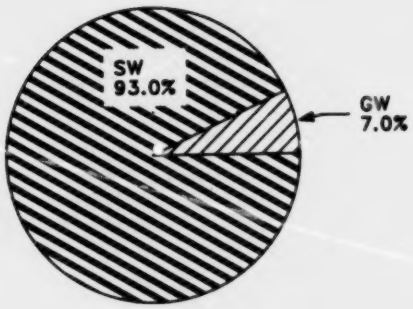


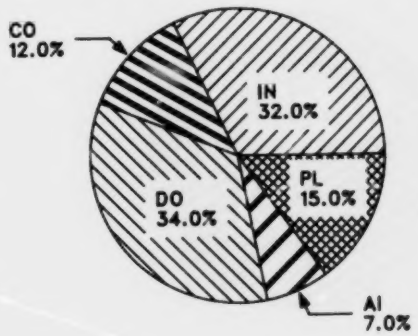
REPORTED WITHDRAWAL
(in million gallons per day)

Ground water (GW)	1.56
Surface water (SW)	19.58
Total	21.14

ESTIMATED USE
(in million gallons per day)

Domestic (DO)	6.88
Commercial (CO)	2.47
Industrial (IN)	6.50
Public and Losses (PL)	3.14
Agricultural (AI)	1.44
Total	20.43



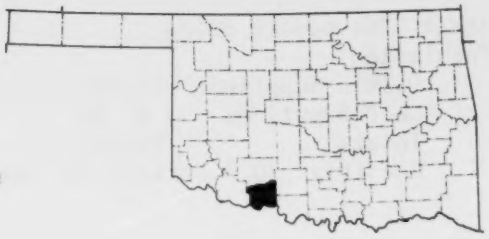


RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	21.14	187	19,360
Estimated use	20.43	181	
Surplus (deficit)	.71	6	

COTTON COUNTY

Area: 651 square miles
Population
Public Supplied: 6,040
Self Supplied: 560
Total: 6,600
Density: 10.1 persons per square mile

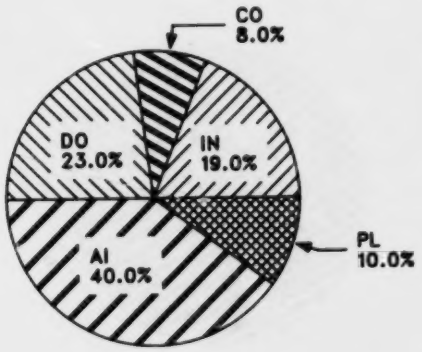


REPORTED WITHDRAWAL
(in million gallons per day)

Ground water (GW)	0.22
Surface water (SW)	.98
Total	1.20

ESTIMATED USE
(in million gallons per day)

Domestic (DO)	0.40
Commercial (CO)	.13
Industrial (IN)	.33
Public and Losses (PL)	.17
Agricultural (AI)	.68
Total	1.71

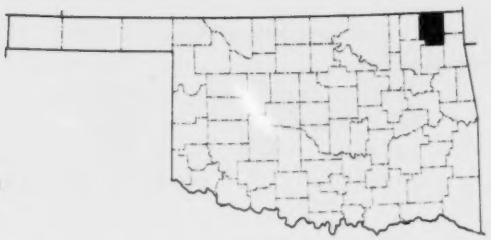


RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	1.20	182	1,840
Estimated use	1.71	259	
Surplus (deficit)	(.51)	(77)	

CRAIG COUNTY

Area: 764 square miles
Population
Public Supplied: 10,810
Self Supplied: 4,590
Total: 15,400
Density: 20.2 persons per square mile

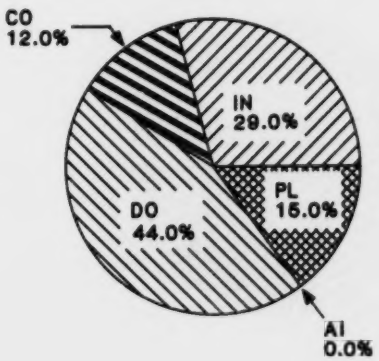


REPORTED WITHDRAWAL
(in million gallons per day)

Ground water (GW)	0.29
Surface water (SW)	1.23
Total	1.52

ESTIMATED USE
(in million gallons per day)

Domestic (DO)	0.92
Commercial (CO)	.24
Industrial (IN)	.60
Public and Losses (PL)	.30
Agricultural (AI)	.00
Total	2.06

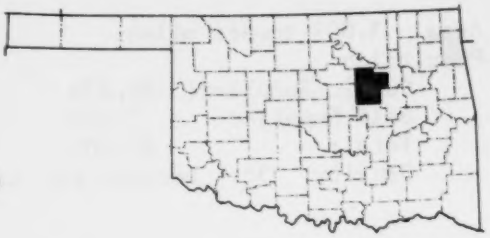


RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	1.52	99	1,990
Estimated use	2.06	134	
Surplus (deficit)	(.54)	(35)	

CREEK COUNTY

Area: 976 square miles
Population
Public Supplied: 47,330
Self Supplied: 16,370
Total: 63,700
Density: 65.3 persons per square mile

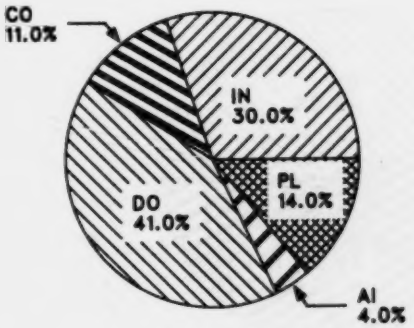


REPORTED WITHDRAWAL
(in million gallons per day)

Ground water (GW)	1.10
Surface water (SW)	5.87
Total	6.97

ESTIMATED USE
(in million gallons per day)

Domestic (DO)	3.80
Commercial (CO)	1.04
Industrial (IN)	2.82
Public and Losses (PL)	1.33
Agricultural (AI)	.35
Total	9.34

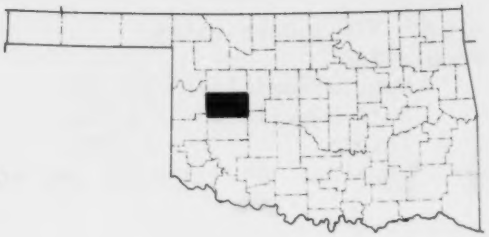


RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	6.97	109	7,140
Estimated use	9.34	147	
Surplus (deficit)	(2.37)	(38)	

CUSTER COUNTY

Area: 1,001 square miles
Population
- Public Supplied: 24,570
- Self Supplied: 7,530
- Total: 32,100
- Density: 32.1 persons per square mile

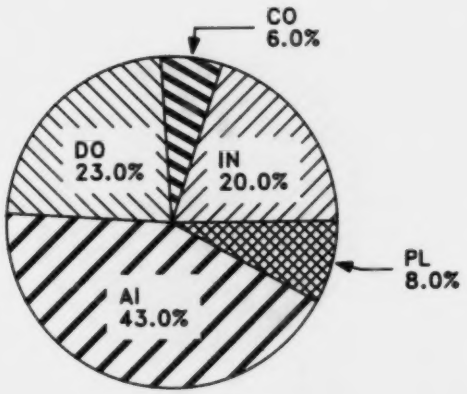


REPORTED WITHDRAWAL
(in million gallons per day)

Ground water (GW)	5.84
Surface water (SW)	6.79
Total	12.63

ESTIMATED USE
(in million gallons per day)

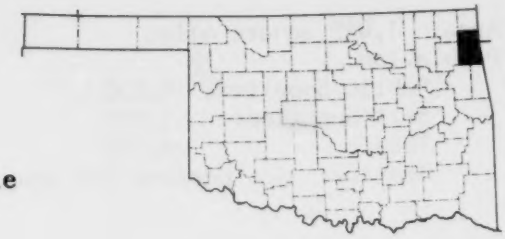
Domestic (DO)	1.92
Commercial (CO)	.54
Industrial (IN)	1.70
Public and Losses (PL)	.69
Agricultural (AI)	3.46
Total	8.31



	RATES		
	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	12.63	393	12,620
Estimated use	8.31	259	
Surplus (deficit)	4.32	134	

DELAWARE COUNTY

Area: 779 square miles
Population
Public Supplied: 13,070
Self Supplied: 12,330
Total: 25,400
Density: 32.6 persons per square mile

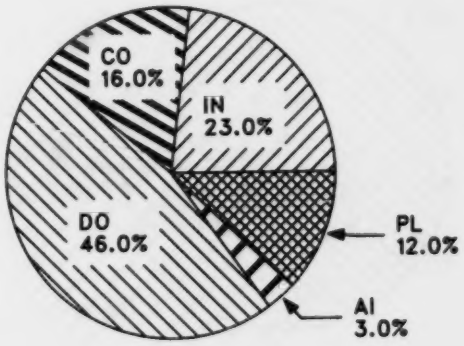


REPORTED WITHDRAWAL
(in million gallons per day)

Ground water (GW)	1.04
Surface water (SW)	.21
Total	1.25

ESTIMATED USE
(in million gallons per day)

Domestic (DO)	1.49
Commercial (CO)	.51
Industrial (IN)	.72
Public and Losses (PL)	.37
Agricultural (AI)	.10
Total	3.19

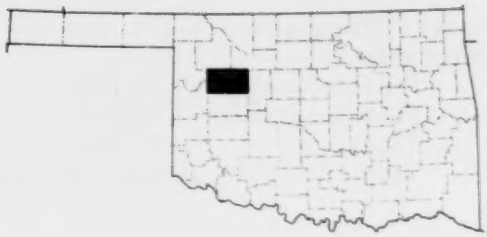


RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	1.25	49	1,600
Estimated use	3.19	126	
Surplus (deficit)	(1.94)	(77)	

DEWEY COUNTY

Area: 1,019 square miles
Population
Public Supplied: 4,830
Self Supplied: 1,870
Total: 6,700
Density: 6.6 persons per square mile

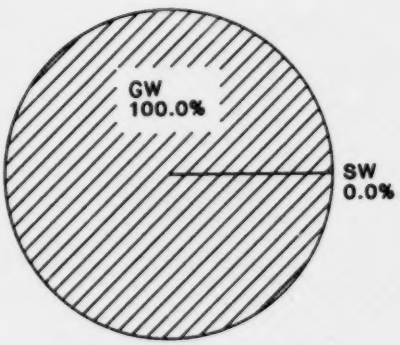


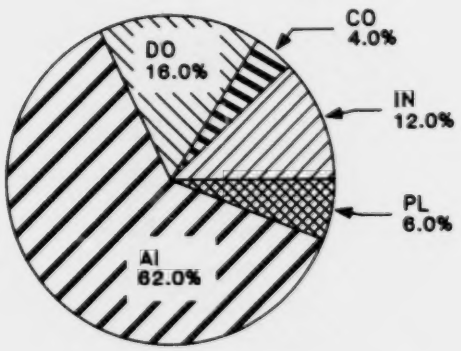
REPORTED WITHDRAWAL
(in million gallons per day)

Ground water (GW)	1.65
Surface water (SW)	.00
Total	1.65

ESTIMATED USE
(in million gallons per day)

Domestic (DO)	0.40
Commercial (CO)	.11
Industrial (IN)	.29
Public and Losses (PL)	.14
Agricultural (AI)	1.51
Total	2.45



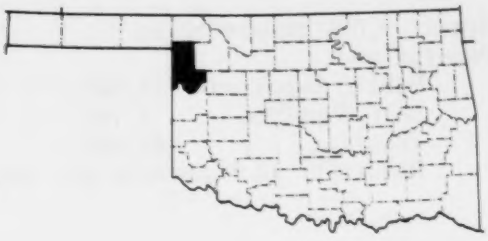


RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	1.65	246	1,620
Estimated use	2.45	366	
Surplus (deficit)	(.80)	(120)	

ELLIS COUNTY

Area: 1,242 square miles
Population
Public Supplied: 3,700
Self Supplied: 3,600
Total: 7,300
Density: 5.9 persons per square mile

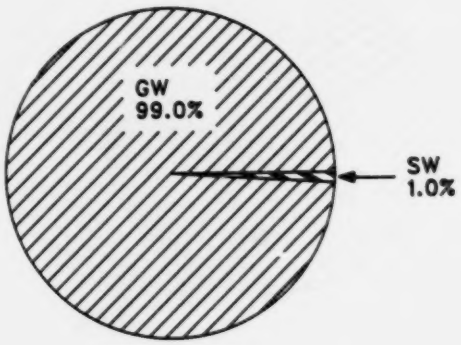


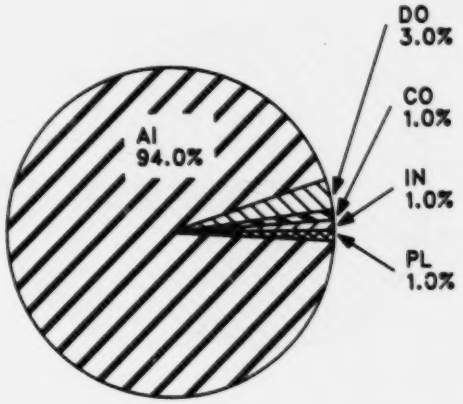
REPORTED WITHDRAWAL
(in million gallons per day)

Ground water (GW)	13.53
Surface water (SW)	.08
Total	13.61

ESTIMATED USE
(in million gallons per day)

Domestic (DO)	0.43
Commercial (CO)	.08
Industrial (IN)	.20
Public and Losses (PL)	.10
Agricultural (AI)	13.24
Total	14.05



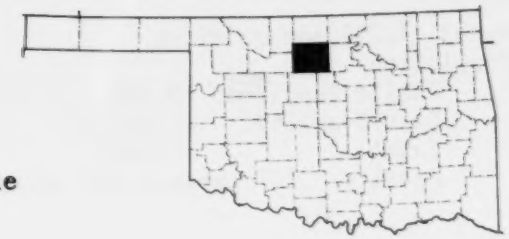


RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	13.61	1,864	10,960
Estimated use	14.05	1,925	
Surplus (deficit)	(.44)	(61)	

GARFIELD COUNTY

Area: 1,054 square miles
Population
Public Supplied: 61,860
Self Supplied: 3,740
Total: 65,600
Density: 62.2 persons per square mile

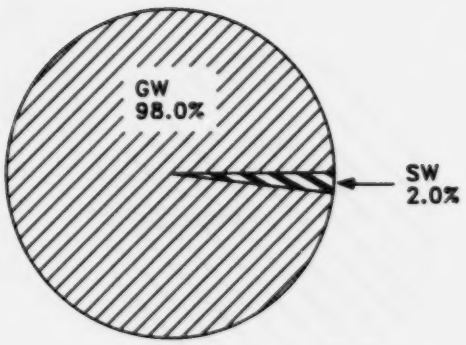


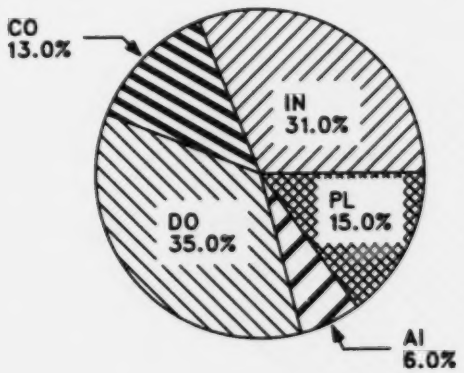
REPORTED WITHDRAWAL
(in million gallons per day)

Ground water (GW)	6.35
Surface water (SW)	.15
Total	6.50

ESTIMATED USE
(in million gallons per day)

Domestic (DO)	3.98
Commercial (CO)	1.45
Industrial (IN)	3.49
Public and Losses (PL)	1.73
Agricultural (AI)	.70
Total	11.35



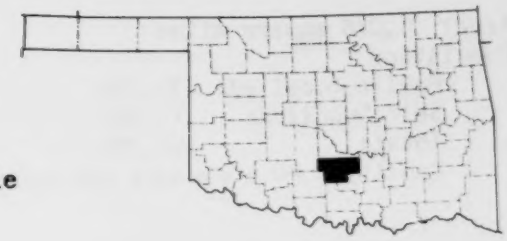


RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	6.50	99	6,170
Estimated use	11.35	173	
Surplus (deficit)	(4.85)	(74)	

GARVIN COUNTY

Area: 814 square miles
Population
Public Supplied: 23,100
Self Supplied: 8,300
Total: 31,400
Density: 38.6 persons per square mile

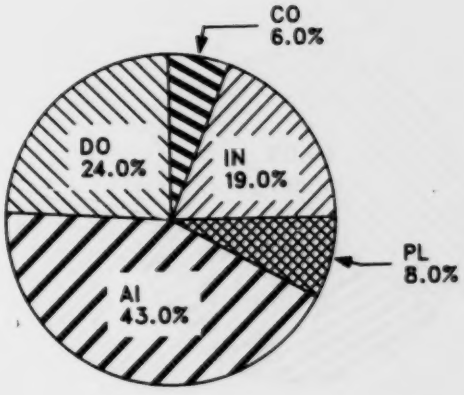


REPORTED WITHDRAWAL
(in million gallons per day)

Ground water (GW)	2.91
Surface water (SW)	3.85
Total	6.76

ESTIMATED USE
(in million gallons per day)

Domestic (DO)	1.87
Commercial (CO)	.51
Industrial (IN)	1.51
Public and Losses (PL)	.65
Agricultural (AI)	3.33
Total	7.87

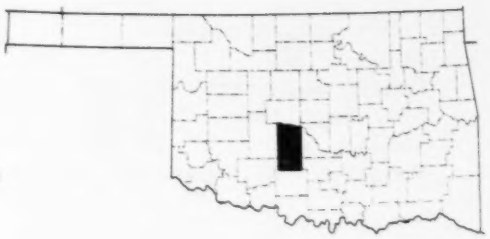


RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	6.76	215	8,300
Estimated use	7.87	251	
Surplus (deficit)	(1.11)	(36)	

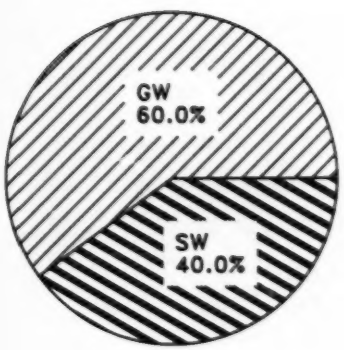
GRADY COUNTY

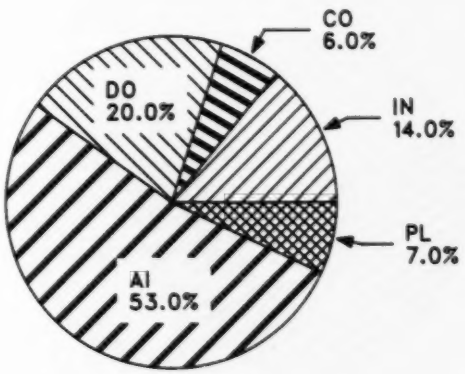
Area: 1,096 square miles
Population
- Public Supplied: 33,260
- Self Supplied: 11,040
- Total: 44,300
- Density: 40.4 persons per square mile



REPORTED WITHDRAWAL (in million gallons per day)	
Ground water (GW)	4.95
Surface water (SW)	3.33
Total	8.28

ESTIMATED USE (in million gallons per day)	
Domestic (DO)	2.65
Commercial (CO)	.73
Industrial (IN)	1.83
Public and Losses (PL)	.93
Agricultural (AI)	7.10
Total	13.24



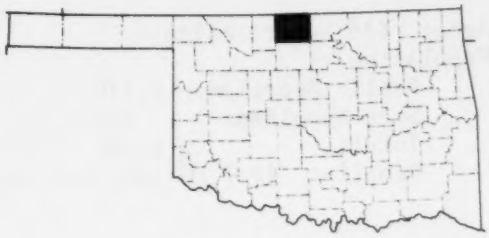


RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	8.28	187	7,550
Estimated use	13.24	299	
Surplus (deficit)	(4.96)	(112)	

GRANT COUNTY

Area: 1,007 square miles
Population
Public Supplied: 5,400
Self Supplied: 1,500
Total: 6,900
Density: 6.8 persons per square mile

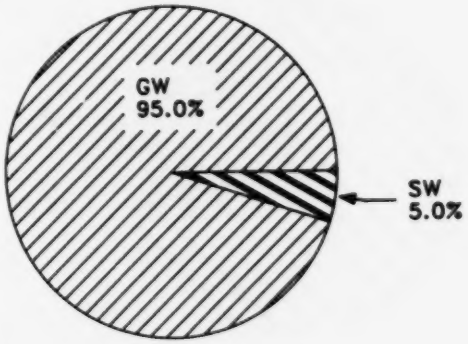


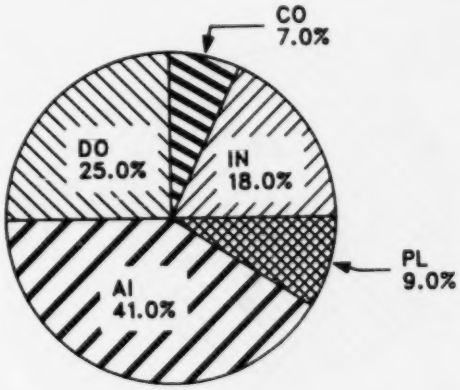
REPORTED WITHDRAWAL
(in million gallons per day)

Ground water (GW)	1.67
Surface water (SW)	.09
Total	1.76

ESTIMATED USE
(in million gallons per day)

Domestic (DO)	0.41
Commercial (CO)	.12
Industrial (IN)	.30
Public and Losses (PL)	.15
Agricultural (AI)	.65
Total	1.63



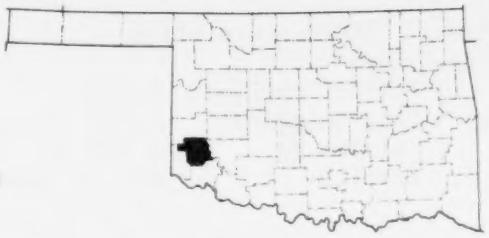


RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	1.76	255	1,750
Estimated use	1.63	236	
Surplus (deficit)	.13	19	

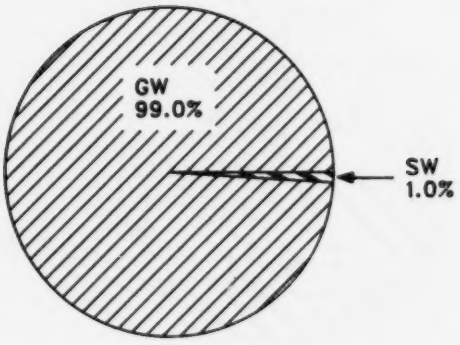
GREER COUNTY

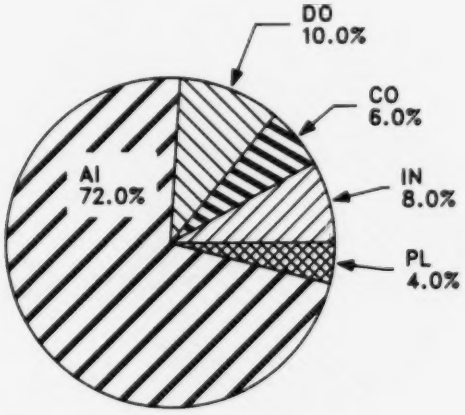
Area: 638 square miles
Population
- Public Supplied: 6,110
- Self Supplied: 690
- Total: 6,800
- Density: 10.7 persons per square mile



REPORTED WITHDRAWAL (in million gallons per day)	
Ground water (GW)	4.39
Surface water (SW)	.04
Total	4.43

ESTIMATED USE (in million gallons per day)	
Domestic (DO)	0.41
Commercial (CO)	.26
Industrial (IN)	.34
Public and Losses (PL)	.17
Agricultural (AI)	3.02
Total	4.20

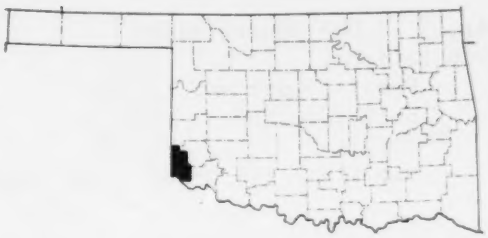




	RATES		
	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	4.43	651	6,940
Estimated use	4.20	618	
Surplus (deficit)	.23	33	

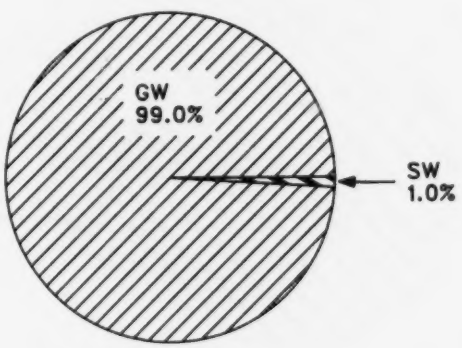
HARMON COUNTY

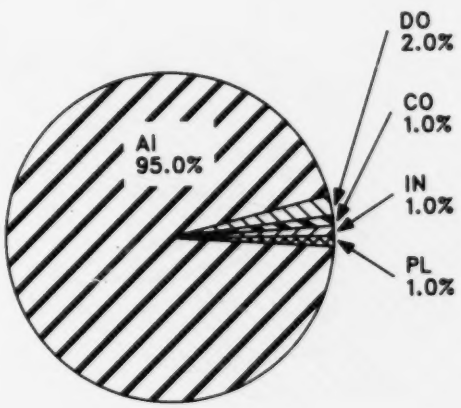
Area: 545 square miles
Population
Public Supplied: 4,240
Self Supplied: 760
Total: 5,000
Density: 9.2 persons per square mile



REPORTED WITHDRAWAL (in million gallons per day)	
Ground water (GW)	15.82
Surface water (SW)	.19
Total	16.01

ESTIMATED USE (in million gallons per day)	
Domestic (DO)	0.30
Commercial (CO)	.09
Industrial (IN)	.24
Public and Losses (PL)	.12
Agricultural (AI)	15.70
Total	16.45



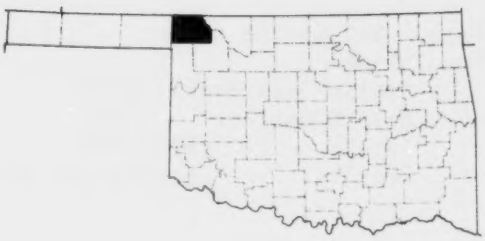


RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	16.01	3,202	29,380
Estimated use	16.45	3,290	
Surplus (deficit)	(.44)	(88)	

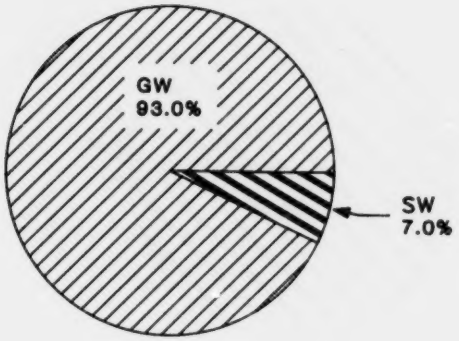
HARPER COUNTY

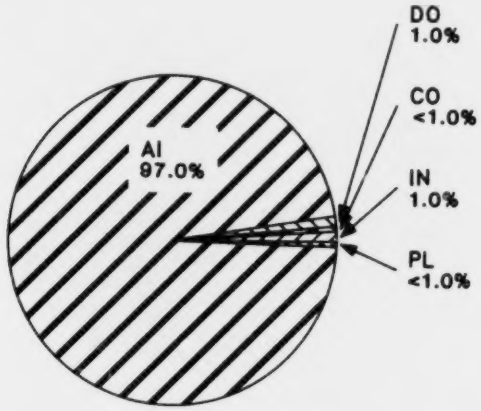
Area: 1,041 square miles
Population
- Public Supplied: 3,730
- Self Supplied: 1,270
- Total: 5,000
- Density: 4.8 persons per square mile



REPORTED WITHDRAWAL (in million gallons per day)	
Ground water (GW)	35.03
Surface water (SW)	2.79
Total	37.82

ESTIMATED USE (in million gallons per day)	
Domestic (DO)	0.30
Commercial (CO)	.08
Industrial (IN)	.21
Public and Losses (PL)	.10
Agricultural (AI)	36.74
Total	37.43

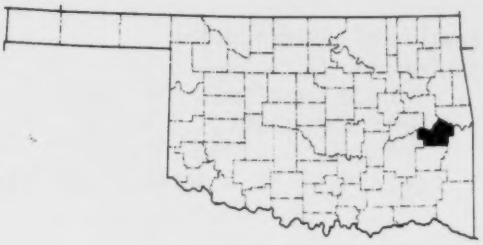




	RATES		
	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	37.82	7,564	36,330
Estimated use	37.43	7,486	
Surplus (deficit)	.39	78	

HASKELL COUNTY

Area: 621 square miles
Population
Public Supplied: 8,830
Self Supplied: 2,670
Total: 11,500
Density: 18.5 persons per square mile

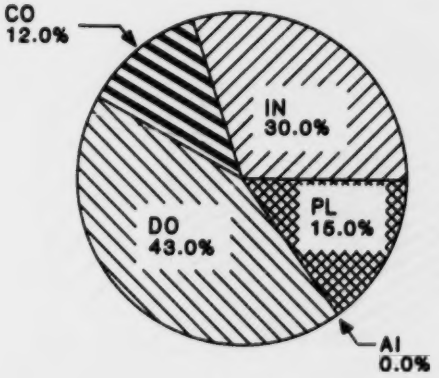


REPORTED WITHDRAWAL
(in million gallons per day)

Ground water (GW)	0.15
Surface water (SW)	.68
Total	.80

ESTIMATED USE
(in million gallons per day)

Domestic (DO)	0.69
Commercial (CO)	.19
Industrial (IN)	.49
Public and Losses (PL)	.25
Agricultural (AI)	.00
Total	1.62

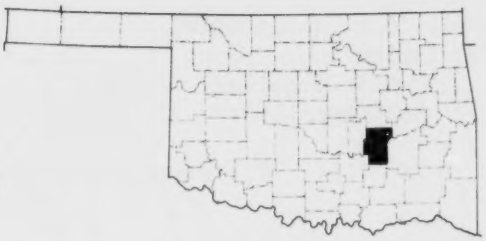


RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	0.80	70	1,290
Estimated use	1.62	141	
Surplus (deficit)	(.82)	(71)	

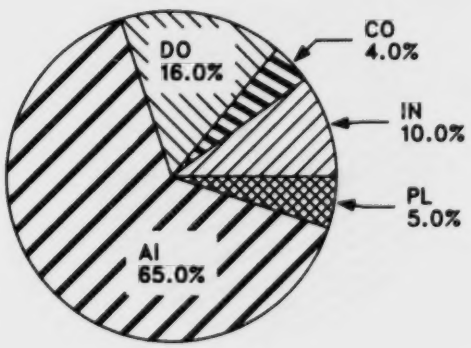
HUGHES COUNTY

Area: 817 square miles
Population
Public Supplied: 10,230
Self Supplied: 5,670
Total: 15,900
Density: 19.5 persons per square mile



REPORTED WITHDRAWAL (in million gallons per day)	
Ground water (GW)	2.15
Surface water (SW)	3.12
Total	5.27

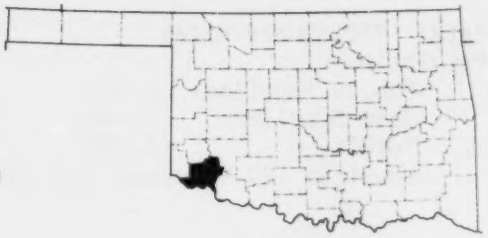
ESTIMATED USE (in million gallons per day)	
Domestic (DO)	0.94
Commercial (CO)	.23
Industrial (IN)	.56
Public and Losses (PL)	.29
Agricultural (AI)	3.68
Total	5.70



	RATES		
	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	5.27	331	6,450
Estimated use	5.70	358	
Surplus (deficit)	(.43)	(27)	

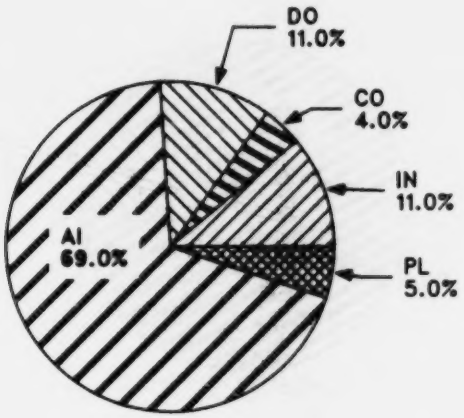
JACKSON COUNTY

Area: 810 square miles
Population
- Public Supplied: 27,680
- Self Supplied: 620
- Total: 28,300
- Density: 34.9 persons per square mile



REPORTED WITHDRAWAL (in million gallons per day)	
Ground water (GW)	8.66
Surface water (SW)	2.95
Total	11.61

ESTIMATED USE (in million gallons per day)	
Domestic (DO)	1.72
Commercial (CO)	.61
Industrial (IN)	1.71
Public and Losses (PL)	.78
Agricultural (AI)	11.36
Total	16.18



RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	11.61	410	14,330
Estimated use	16.18	572	
Surplus (deficit)	(4.57)	(162)	

JEFFERSON COUNTY

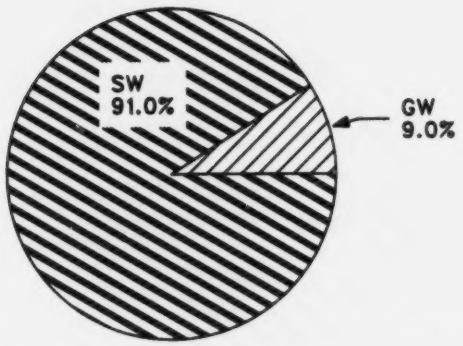
Area: 780 square miles
Population
- Public Supplied: 6,300
- Self Supplied: 1,800
- Total: 8,100
- Density: 10.4 persons per square mile

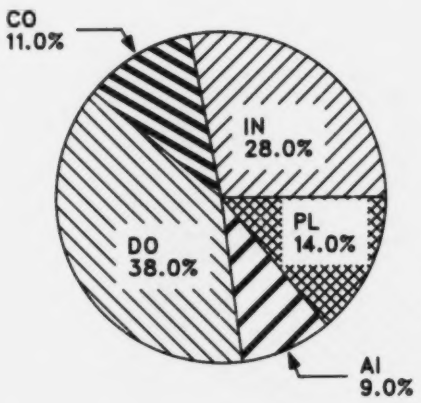
REPORTED WITHDRAWAL
(in million gallons per day)

Ground water (GW)	0.40
Surface water (SW)	4.15
Total	4.55

ESTIMATED USE
(in million gallons per day)

Domestic (DO)	0.49
Commercial (CO)	.14
Industrial (IN)	.35
Public and Losses (PL)	.18
Agricultural (AI)	.11
Total	1.27



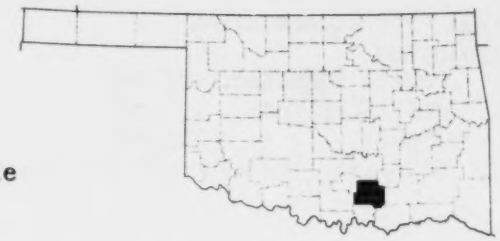


RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	4.55	562	5,830
Estimated use	1.27	157	
Surplus (deficit)	3.28	405	

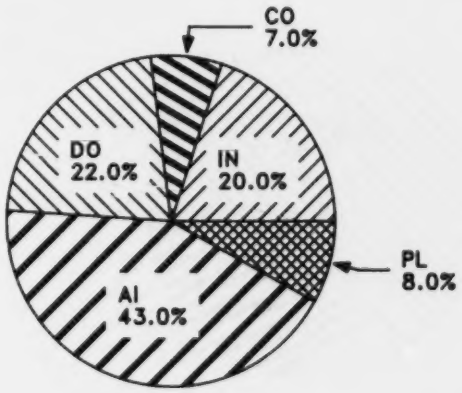
JOHNSTON COUNTY

Area: 657 square miles
Population
Public Supplied: 8,630
Self Supplied: 1,870
Total: 10,500
Density: 16.0 persons per square mile



REPORTED WITHDRAWAL (in million gallons per day)	
Ground water (GW)	1.10
Surface water (SW)	1.03
Total	2.13

ESTIMATED USE (in million gallons per day)	
Domestic (DO)	0.63
Commercial (CO)	.19
Industrial (IN)	.58
Public and Losses (PL)	.24
Agricultural (AI)	1.26
Total	2.90

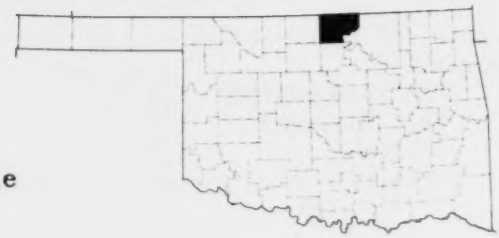


RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	2.13	203	3,240
Estimated use	2.90	276	
Surplus (deficit)	(.77)	(73)	

KAY COUNTY

Area: 952 square miles
Population
Public Supplied: 47,900
Self Supplied: 3,500
Total: 51,400
Density: 54.0 persons per square mile

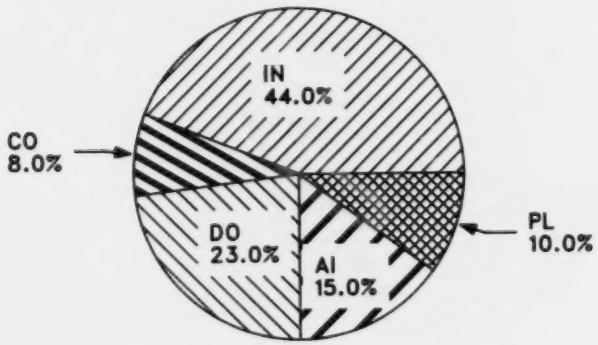


REPORTED WITHDRAWAL
(in million gallons per day)

Ground water (GW)	11.15
Surface water (SW)	3.57
Total	14.72

ESTIMATED USE
(in million gallons per day)

Domestic (DO)	3.12
Commercial (CO)	1.05
Industrial (IN)	6.12
Public and Losses (PL)	1.34
Agricultural (AI)	2.00
Total	13.63

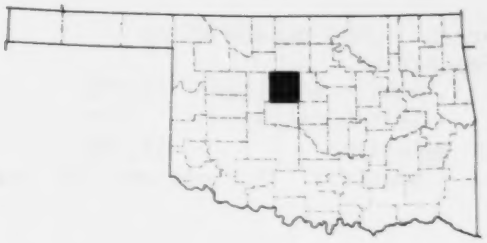


RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	14.72	286	15,460
Estimated use	13.63	265	
Surplus (deficit)	1.09	21	

KINGFISHER COUNTY

Area: 904 square miles
Population
Public Supplied: 10,770
Self Supplied: 5,730
Total: 16,500
Density: 18.3 persons per square mile

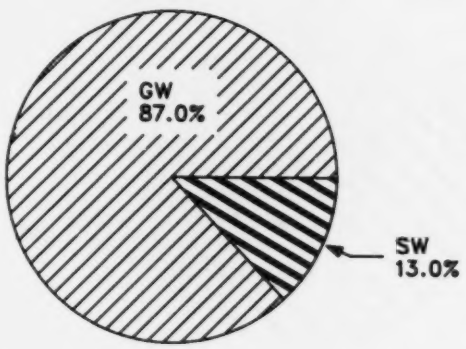


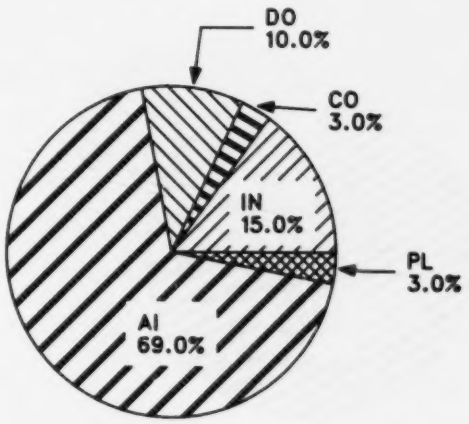
REPORTED WITHDRAWAL
(in million gallons per day)

Ground water (GW)	7.61
Surface water (SW)	1.14
Total	8.75

ESTIMATED USE
(in million gallons per day)

Domestic (DO)	0.98
Commercial (CO)	.24
Industrial (IN)	1.41
Public and Losses (PL)	.30
Agricultural (AI)	6.50
Total	9.43



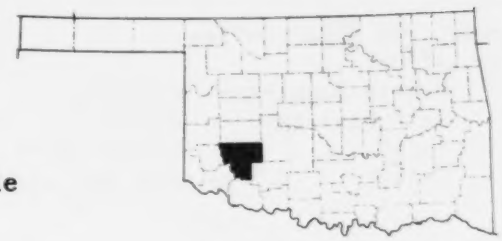


RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	8.75	530	9,680
Estimated use	9.43	572	
Surplus (deficit)	(.68)	(42)	

KIOWA COUNTY

Area: 1,034 square miles
Population
Public Supplied: 11,790
Self Supplied: 410
Total: 12,200
Density: 11.8 persons per square mile

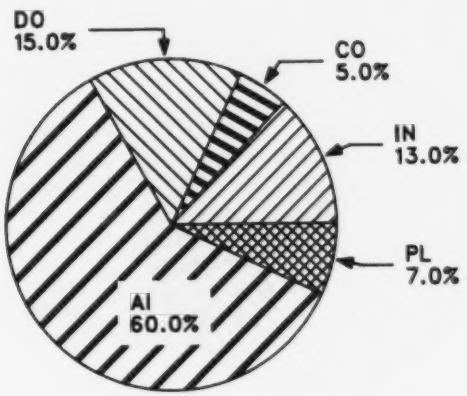


REPORTED WITHDRAWAL
(in million gallons per day)

Ground water (GW)	1.92
Surface water (SW)	5.13
Total	7.05

ESTIMATED USE
(in million gallons per day)

Domestic (DO)	0.74
Commercial (CO)	.26
Industrial (IN)	.66
Public and Losses (PL)	.33
Agricultural (AI)	3.08
Total	5.07

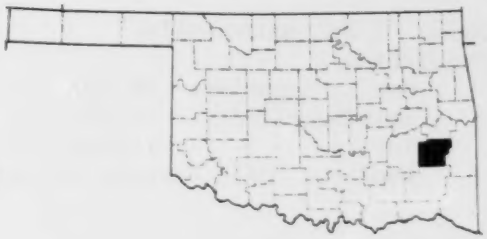


RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	7.05	578	6,820
Estimated use	5.07	416	
Surplus (deficit)	1.98	162	

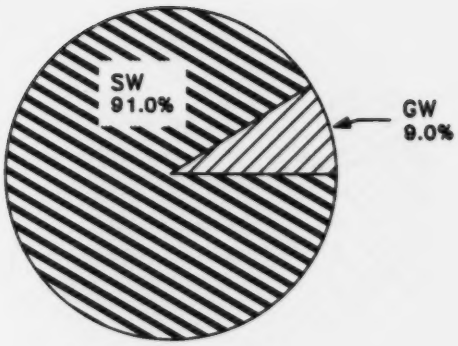
LATIMER COUNTY

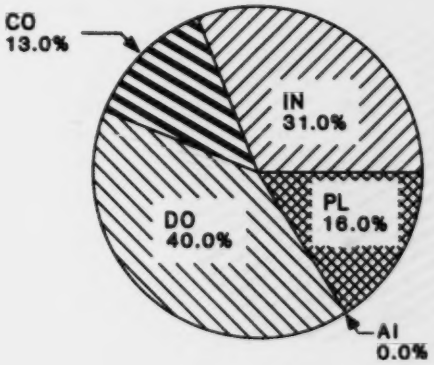
Area: 737 square miles
Population
Public Supplied: 8,630
Self Supplied: 1,370
Total: 10,000
Density: 13.6 persons per square mile



REPORTED WITHDRAWAL (in million gallons per day)	
Ground water (GW)	0.08
Surface water (SW)	.84
Total	.92

ESTIMATED USE (in million gallons per day)	
Domestic (DO)	0.60
Commercial (CO)	.19
Industrial (IN)	.47
Public and Losses (PL)	.24
Agricultural (AI)	.00
Total	1.50



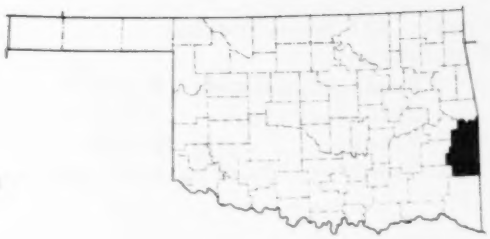


RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	0.92	92	1,250
Estimated use	1.50	150	
Surplus (deficit)	(.58)	(58)	

LE FLORE COUNTY

Area: 1,582 square miles
Population
- Public Supplied: 39,100
- Self Supplied: 2,300
- Total: 41,400
- Density: 26.2 persons per square mile

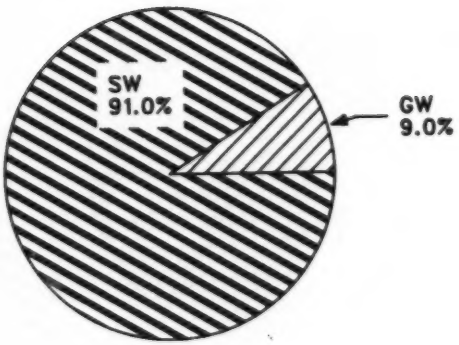


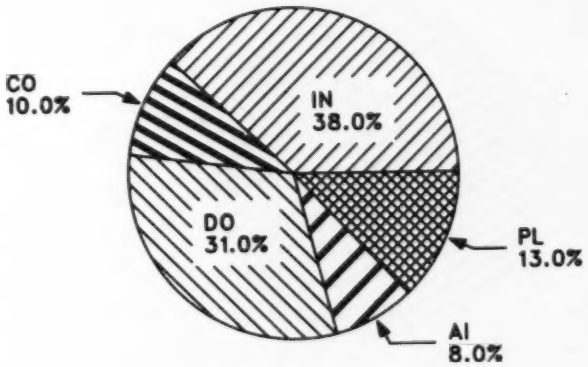
REPORTED WITHDRAWAL
(in million gallons per day)

Ground water (GW)	0.23
Surface water (SW)	2.35
Total	2.58

ESTIMATED USE
(in million gallons per day)

Domestic (DO)	2.51
Commercial (CO)	.86
Industrial (IN)	3.13
Public and Losses (PL)	1.09
Agricultural (AI)	.63
Total	8.22



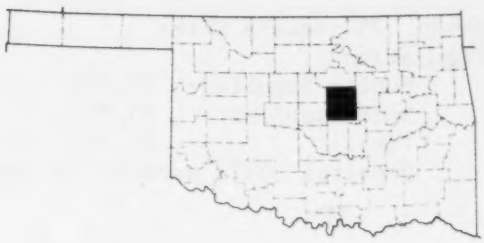


RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	2.58	62	1,630
Estimated use	8.22	199	
Surplus (deficit)	(5.64)	(137)	

LINCOLN COUNTY

Area: 973 square miles
Population
Public Supplied: 15,880
Self Supplied: 12,320
Total: 28,200
Density: 29.0 persons per square mile

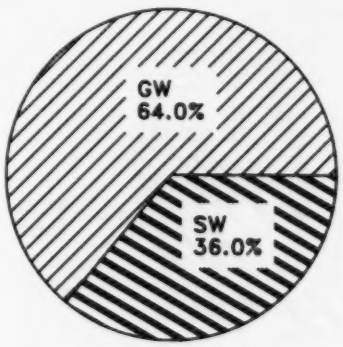


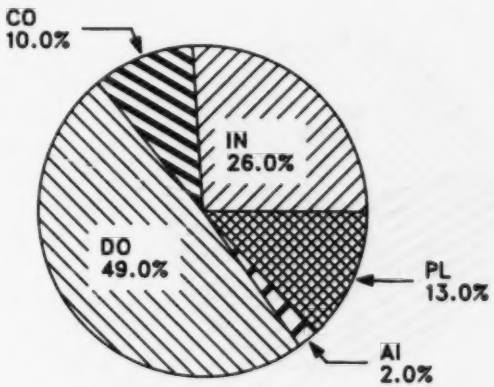
REPORTED WITHDRAWAL
(in million gallons per day)

Ground water (GW)	1.32
Surface water (SW)	.74
Total	2.06

ESTIMATED USE
(in million gallons per day)

Domestic (DO)	1.66
Commercial (CO)	.35
Industrial (IN)	.90
Public and Losses (PL)	.44
Agricultural (AI)	.06
Total	3.41

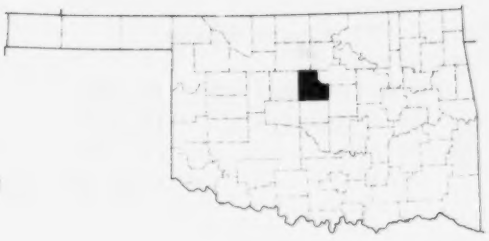




RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	2.06	73	2,120
Estimated use	3.41	121	
Surplus (deficit)	(1.35)	(48)	

LOGAN COUNTY



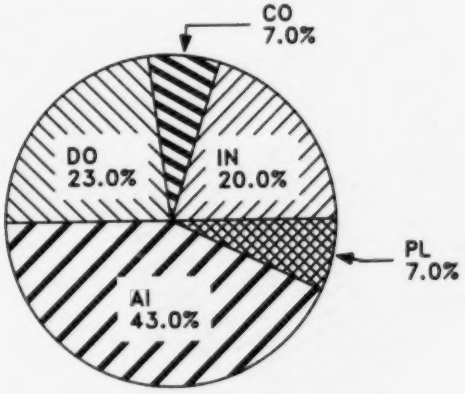
Area: 752 square miles
Population
- Public Supplied: 17,710
- Self Supplied: 10,790
- Total: 28,500
- Density: 34.3 persons per square mile

REPORTED WITHDRAWAL
(in million gallons per day)

Ground water (GW)	3.36
Surface water (SW)	3.98
Total	7.34

ESTIMATED USE
(in million gallons per day)

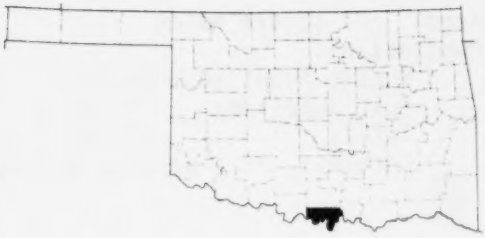
Domestic (DO)	1.68
Commercial (CO)	.52
Industrial (IN)	1.51
Public and Losses (PL)	.50
Agricultural (AI)	3.19
Total	7.40



	RATES		
	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	7.34	258	9,760
Estimated use	7.40	260	
Surplus (deficit)	(.06)	(2)	

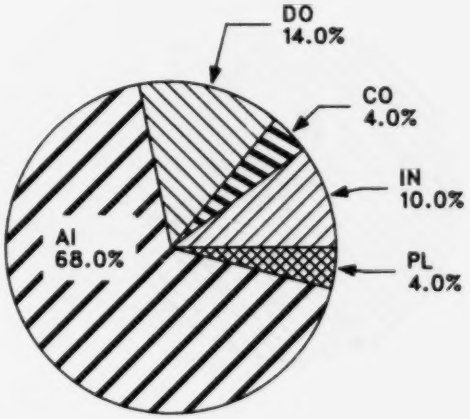
LOVE COUNTY

Area: 529 square miles
Population
Public Supplied: 5,420
Self Supplied: 2,280
Total: 7,700
Density: 14.6 persons per square mile



REPORTED WITHDRAWAL (in million gallons per day)	
Ground water (GW)	1.52
Surface water (SW)	1.23
Total	2.75

ESTIMATED USE (in million gallons per day)	
Domestic (DO)	0.46
Commercial (CO)	.12
Industrial (IN)	.33
Public and Losses (PL)	.15
Agricultural (AI)	2.32
Total	3.38

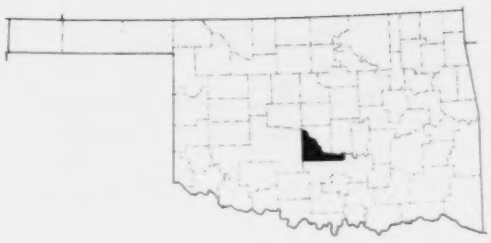


RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	2.75	357	5,200
Estimated use	3.38	439	
Surplus (deficit)	(.63)	(82)	

MCCLAIN COUNTY

Area: 573 square miles
Population
- Public Supplied: 14,370
- Self Supplied: 7,130
- Total: 21,500
- Density: 37.5 persons per square mile

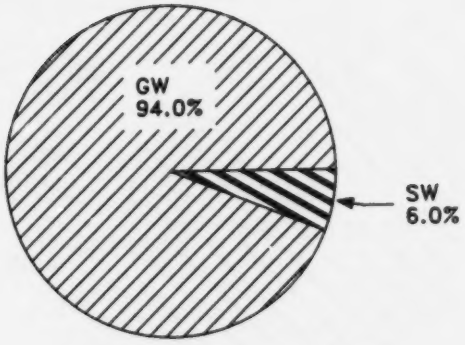


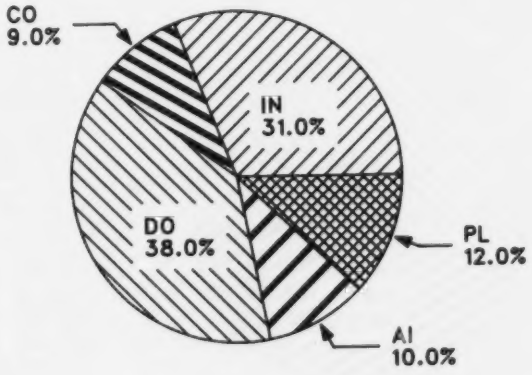
REPORTED WITHDRAWAL
(in million gallons per day)

Ground water (GW)	1.39
Surface water (SW)	.09
Total	1.48

ESTIMATED USE
(in million gallons per day)

Domestic (DO)	1.28
Commercial (CO)	.32
Industrial (IN)	1.06
Public and Losses (PL)	.40
Agricultural (AI)	.35
Total	3.41





RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	1.48	69	2,580
Estimated use	3.41	159	
Surplus (deficit)	(1.93)	(90)	

MCCURTAIN COUNTY

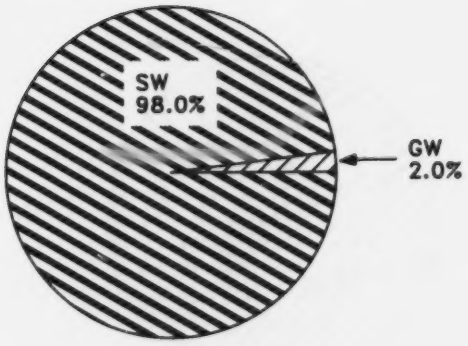
Area: 1,874 square miles
Population
- Public Supplied: 22,180
- Self Supplied: 11,320
- Total: 33,500
- Density: 17.9 persons per square mile

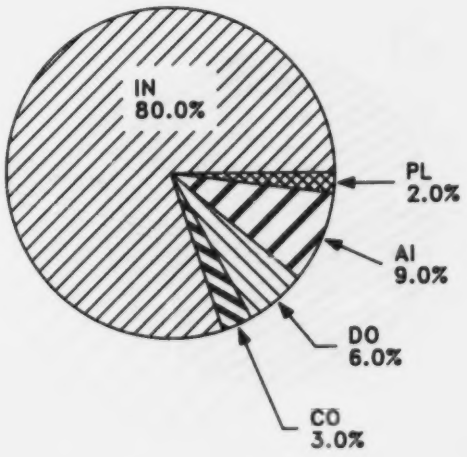
REPORTED WITHDRAWAL
(in million gallons per day)

Ground water (GW)	0.71
Surface water (SW)	33.70
Total	34.41

ESTIMATED USE
(in million gallons per day)

Domestic (DO)	1.99
Commercial (CO)	.92
Industrial (IN)	28.32
Public and Losses (PL)	.62
Agricultural (AI)	3.21
Total	35.06



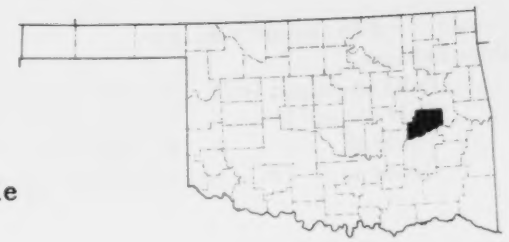


RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	34.41	1,027	18,360
Estimated use	35.06	1,047	
Surplus (deficit)	(.65)	(20)	

MCINTOSH COUNTY

Area: 720 square miles
Population
Public Supplied: 13,580
Self Supplied: 3,220
Total: 16,800
Density: 23.3 persons per square mile

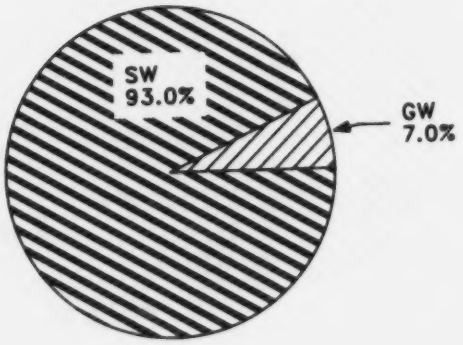


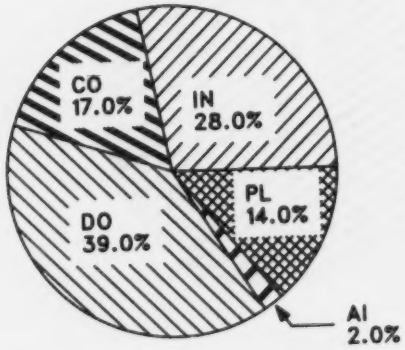
REPORTED WITHDRAWAL
(in million gallons per day)

Ground water (GW)	0.24
Surface water (SW)	3.21
Total	3.45

ESTIMATED USE
(in million gallons per day)

Domestic (DO)	1.01
Commercial (CO)	.46
Industrial (IN)	.75
Public and Losses (PL)	.38
Agricultural (AI)	.04
Total	2.64



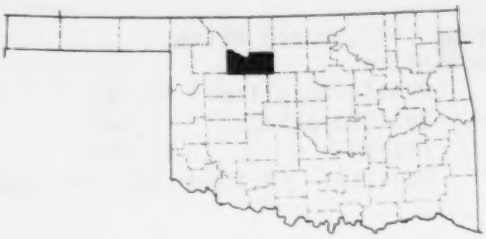


RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	3.45	205	4,790
Estimated use	2.64	157	
Surplus (deficit)	.81	48	

MAJOR COUNTY

Area: 963 square miles
Population
Public Supplied: 6,610
Self Supplied: 2,790
Total: 9,400
Density: 9.8 persons per square mile

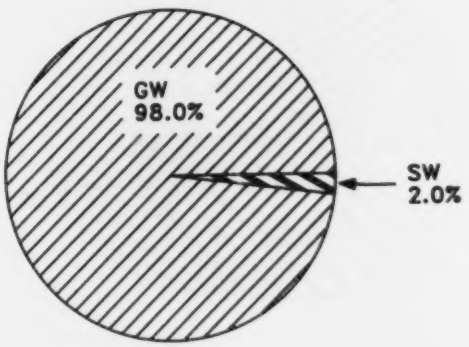


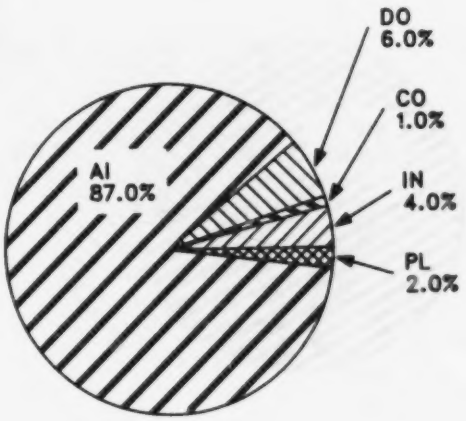
REPORTED WITHDRAWAL
(in million gallons per day)

Ground water (GW)	11.10
Surface water (SW)	.22
Total	11.32

ESTIMATED USE
(in million gallons per day)

Domestic (DO)	0.56
Commercial (CO)	.15
Industrial (IN)	.44
Public and Losses (PL)	.19
Agricultural (AI)	8.74
Total	10.08



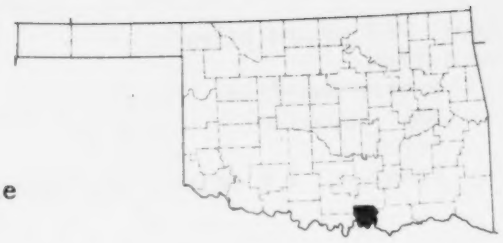


RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	11.32	1,204	11,750
Estimated use	10.08	1,072	
Surplus (deficit)	1.24	132	

MARSHALL COUNTY

Area: 421 square miles
Population
- Public Supplied: 10,040
- Self Supplied: 1,860
- Total: 11,900
- Density: 28.3 persons per square mile

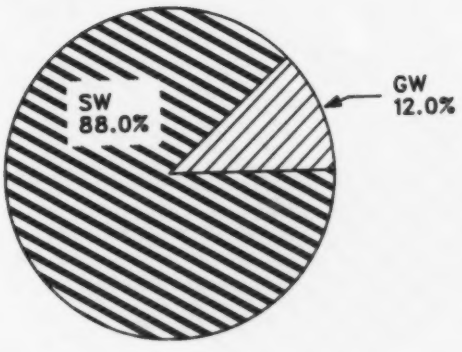


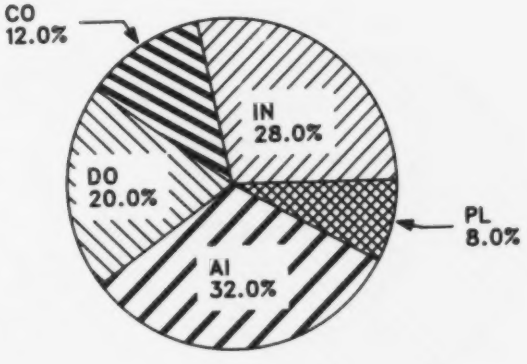
REPORTED WITHDRAWAL
(in million gallons per day)

Ground water (GW)	0.36
Surface water (SW)	2.61
Total	2.97

ESTIMATED USE
(in million gallons per day)

Domestic (DO)	0.72
Commercial (CO)	.43
Industrial (IN)	1.00
Public and Losses (PL)	.28
Agricultural (AI)	1.15
Total	3.58



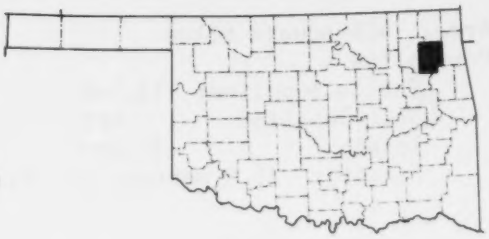


RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	2.97	250	7,050
Estimated use	3.58	301	
Surplus (deficit)	(.61)	(51)	

MAYES COUNTY

Area: 688 square miles
Population
Public Supplied: 24,970
Self Supplied: 9,430
Total: 34,400
Density: 50.0 persons per square mile

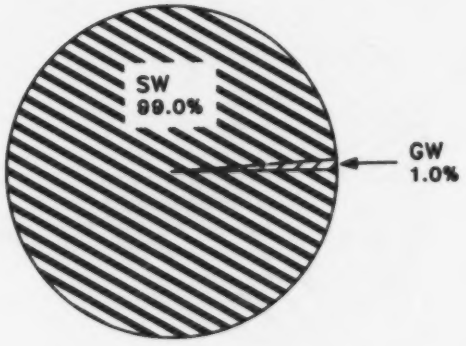


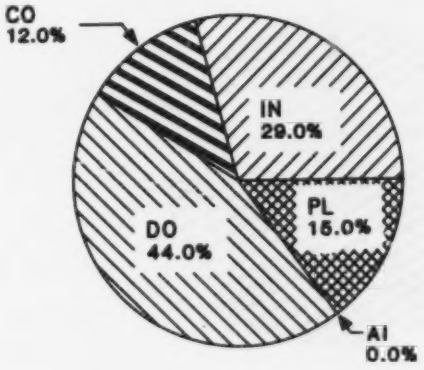
REPORTED WITHDRAWAL
(in million gallons per day)

Ground water (GW)	0.53
Surface water (SW)	71.92
Total	72.45

ESTIMATED USE
(in million gallons per day)

Domestic (DO)	2.05
Commercial (CO)	.55
Industrial (IN)	1.37
Public and Losses (PL)	.70
Agricultural (AI)	.00
Total	4.67



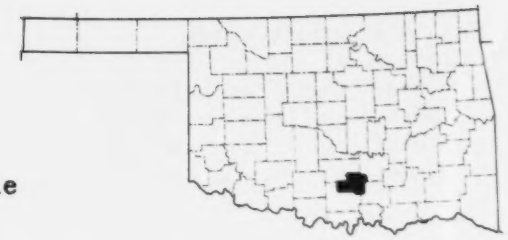


RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	72.45	2,106	105,310
Estimated use	4.67	136	
Surplus (deficit)	67.78	1,970	

MURRAY COUNTY

Area: 428 square miles
Population
Public Supplied: 13,140
Self Supplied: 460
Total: 13,600
Density: 31.8 persons per square mile

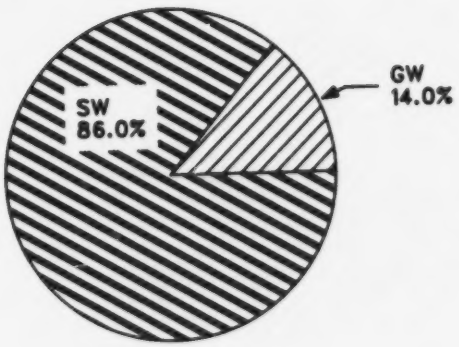


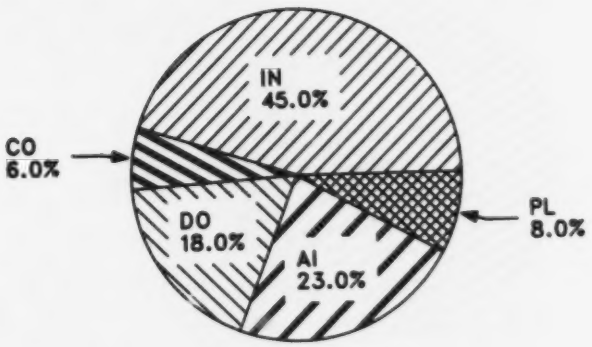
REPORTED WITHDRAWAL
(in million gallons per day)

Ground water (GW)	1.38
Surface water (SW)	8.31
Total	9.69

ESTIMATED USE
(in million gallons per day)

Domestic (DO)	0.83
Commercial (CO)	.29
Industrial (IN)	2.08
Public and Losses (PL)	.37
Agricultural (AI)	1.05
Total	4.62



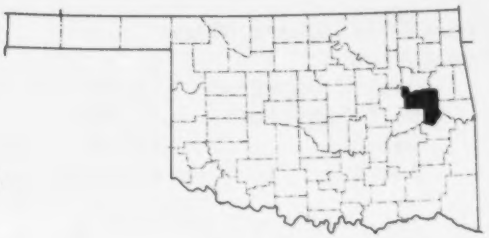


RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	9.69	712	22,640
Estimated use	4.62	340	
Surplus (deficit)	5.07	372	

MUSKOGEE COUNTY

Area: 841 square miles
Population
Public Supplied: 57,120
Self Supplied: 9,780
Total: 66,900
Density: 79.5 persons per square mile

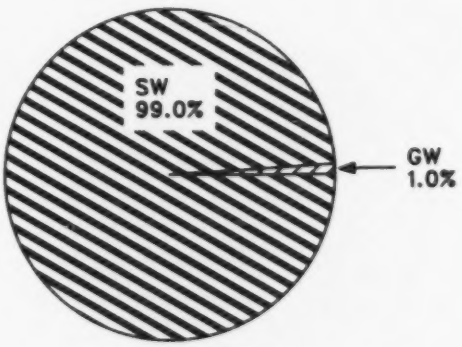


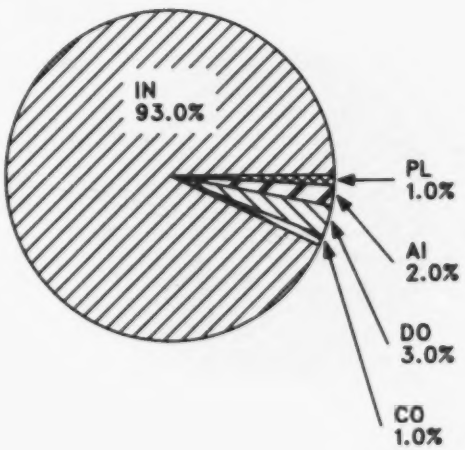
REPORTED WITHDRAWAL
(in million gallons per day)

Ground water (GW)	1.58
Surface water (SW)	136.18
Total	137.76

ESTIMATED USE
(in million gallons per day)

Domestic (DO)	4.03
Commercial (CO)	1.26
Industrial (IN)	128.45
Public and Losses (PL)	1.60
Agricultural (AI)	2.14
Total	137.48





RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	137.76	2,059	163,800
Estimated use	137.48	2,055	
Surplus (deficit)	.28	4	

NOBLE COUNTY

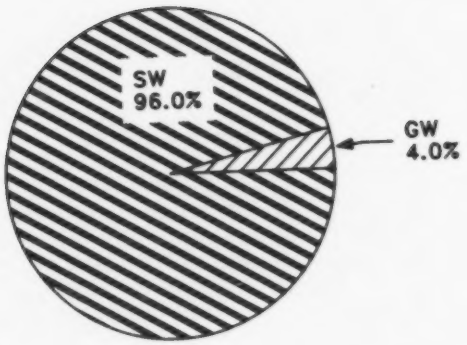
Area: 747 square miles
Population
Public Supplied: 10,050
Self Supplied: 1,950
Total: 12,000
Density: 16.1 persons per square mile

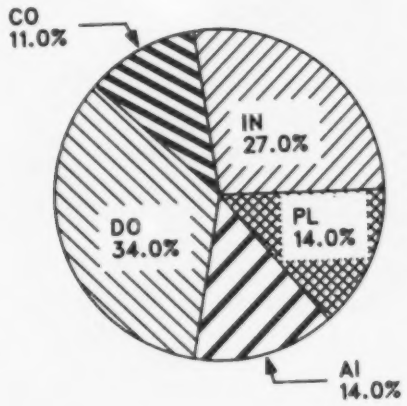
REPORTED WITHDRAWAL
(in million gallons per day)

Ground water (GW)	0.23
Surface water (SW)	5.91
Total	6.14

ESTIMATED USE
(in million gallons per day)

Domestic (DO)	0.72
Commercial (CO)	.22
Industrial (IN)	.55
Public and Losses (PL)	.28
Agricultural (AI)	.29
Total	2.06

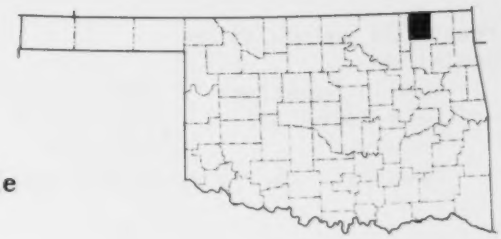




	RATES		
	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	6.14	512	8,220
Estimated use	2.06	172	
Surplus (deficit)	4.08	340	

NOWATA COUNTY

Area: 577 square miles
Population
Public Supplied: 8,770
Self Supplied: 2,730
Total: 11,500
Density: 19.9 persons per square mile

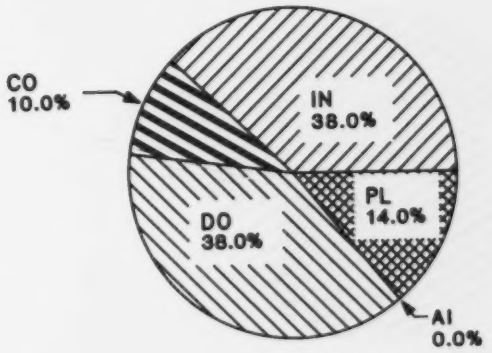


REPORTED WITHDRAWAL
(in million gallons per day)

Ground water (GW)	0.15
Surface water (SW)	.46
Total	.61

ESTIMATED USE
(in million gallons per day)

Domestic (DO)	0.69
Commercial (CO)	.19
Industrial (IN)	.69
Public and Losses (PL)	.25
Agricultural (AI)	.00
Total	1.82

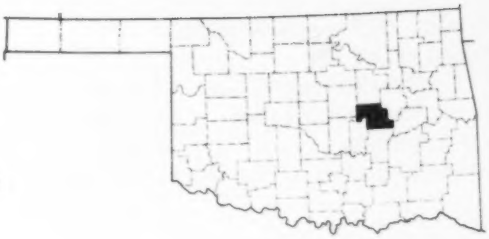


RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	0.61	53	1,060
Estimated use	1.82	158	
Surplus (deficit)	(1.21)	105	

OKFUSKEE COUNTY

Area: 638 square miles
Population
Public Supplied: 7,690
Self Supplied: 2,510
Total: 10,200
Density: 16.0 persons per square mile

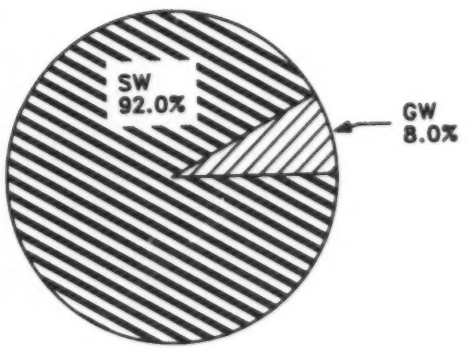


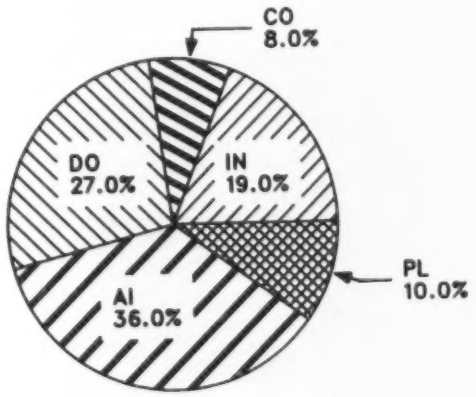
REPORTED WITHDRAWAL
(in million gallons per day)

Ground water (GW)	0.16
Surface water (SW)	1.85
Total	2.01

ESTIMATED USE
(in million gallons per day)

Domestic (DO)	0.61
Commercial (CO)	.19
Industrial (IN)	.43
Public and Losses (PL)	.22
Agricultural (AI)	.82
Total	2.27

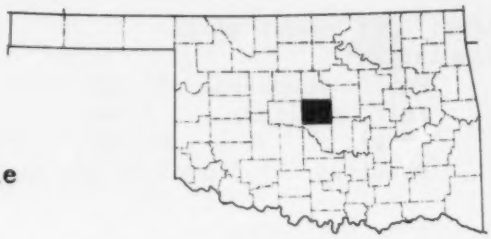




	RATES		
	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	2.01	197	3,150
Estimated use	2.27	223	
Surplus (deficit)	(.26)	(26)	

OKLAHOMA COUNTY

Area: 710 square miles
Population
Public Supplied: 574,600
Self Supplied: 11,000
Total: 585,600
Density: 824.8 persons per square mile

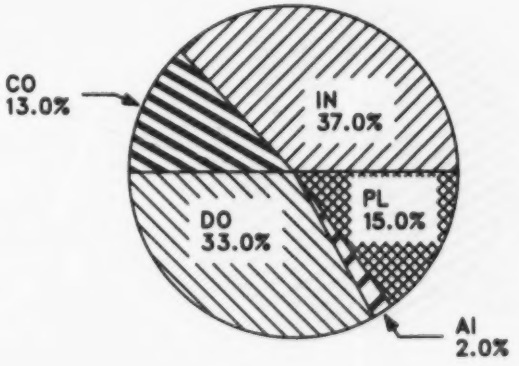


REPORTED WITHDRAWAL
(in million gallons per day)

Ground water (GW)	22.60
Surface water (SW)	61.61
Total	84.21

ESTIMATED USE
(in million gallons per day)

Domestic (DO)	35.67
Commercial (CO)	14.10
Industrial (IN)	41.34
Public and Losses (PL)	16.09
Agricultural (AI)	1.90
Total	109.10

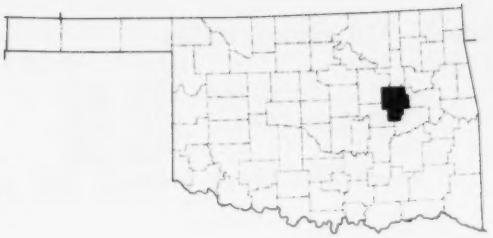


RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	84.21	144	118,610
Estimated use	109.10	186	
Surplus (deficit)	(24.89)	(42)	

OKMULGEE COUNTY

Area: 703 square miles
Population
Public Supplied: 37,160
Self Supplied: 3,140
Total: 40,300
Density: 57.3 persons per square mile

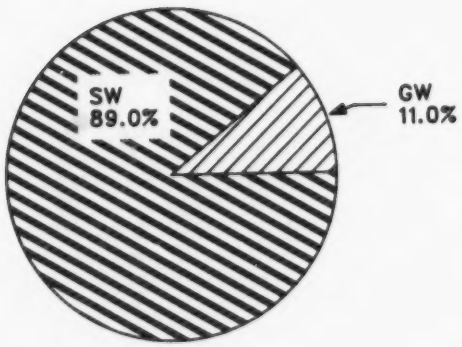


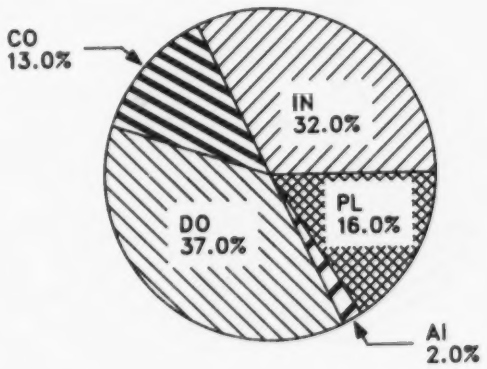
REPORTED WITHDRAWAL
(in million gallons per day)

Ground water (GW)	0.23
Surface water (SW)	1.83
Total	2.06

ESTIMATED USE
(in million gallons per day)

Domestic (DO)	2.44
Commercial (CO)	.82
Industrial (IN)	2.09
Public and Losses (PL)	1.04
Agricultural (AI)	.13
Total	6.52

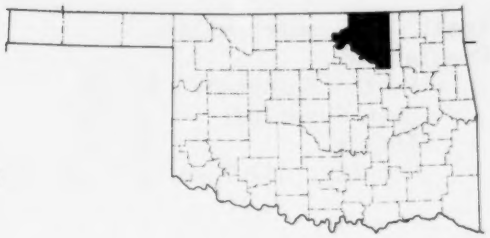




	RATES		
	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	2.06	51	2,930
Estimated use	6.52	162	
Surplus (deficit)	(4.46)	(111)	

OSAGE COUNTY

Area: 2,307 square miles
Population
- Public Supplied: 28,100
- Self Supplied: 12,100
- Total: 40,200
- Density: 17.4 persons per square mile

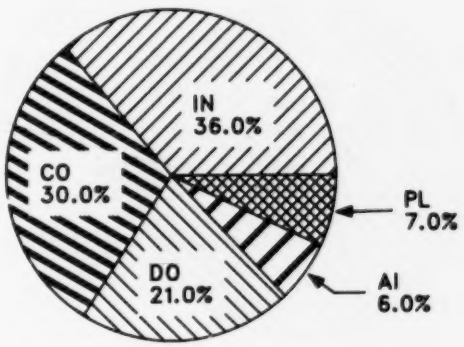


REPORTED WITHDRAWAL
(in million gallons per day)

Ground water (GW)	3.56
Surface water (SW)	14.28
Total	17.84

ESTIMATED USE
(in million gallons per day)

Domestic (DO)	2.39
Commercial (CO)	3.37
Industrial (IN)	3.95
Public and Losses (PL)	.79
Agricultural (AI)	.72
Total	11.22

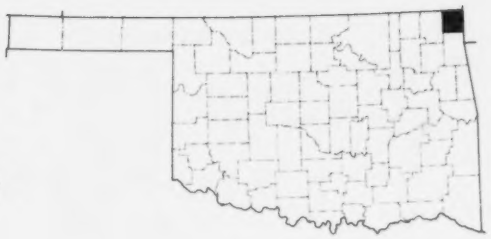


RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	17.84	444	7,730
Estimated use	11.22	279	
Surplus (deficit)	6.62	165	

OTTAWA COUNTY

Area: 483 square miles
Population
Public Supplied: 26,530
Self Supplied: 6,170
Total: 32,700
Density: 67.7 persons per square mile

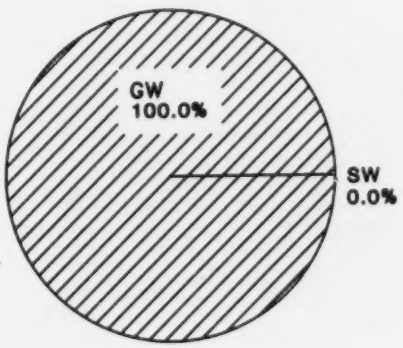


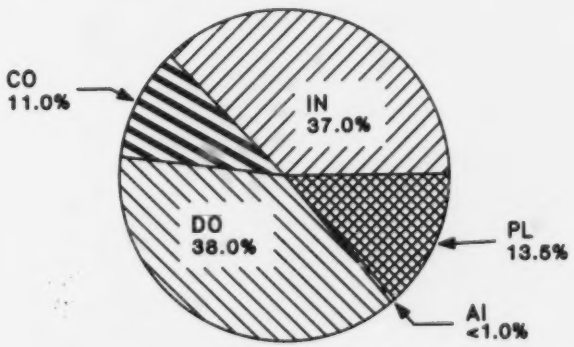
REPORTED WITHDRAWAL
(in million gallons per day)

Ground water (GW)	4.91
Surface water (SW)	.00
Total	4.91

ESTIMATED USE
(in million gallons per day)

Domestic (DO)	1.96
Commercial (CO)	.58
Industrial (IN)	1.94
Public and Losses (PL)	.74
Agricultural (AI)	.01
Total	5.23



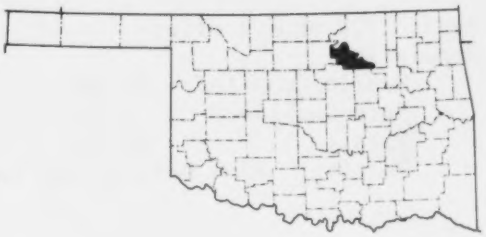


RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	4.91	150	10,170
Estimated use	5.23	160	
Surplus (deficit)	(.32)	(10)	

PAWNEE COUNTY

Area: 600 square miles
Population
Public Supplied: 11,260
Self Supplied: 4,440
Total: 15,700
Density: 26.2 persons per square mile

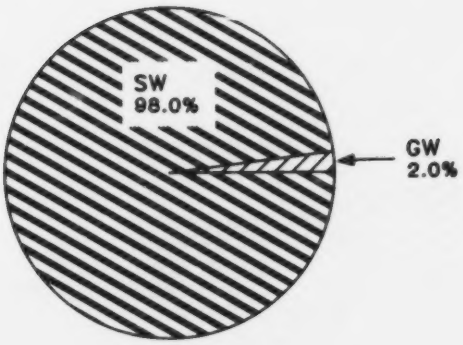


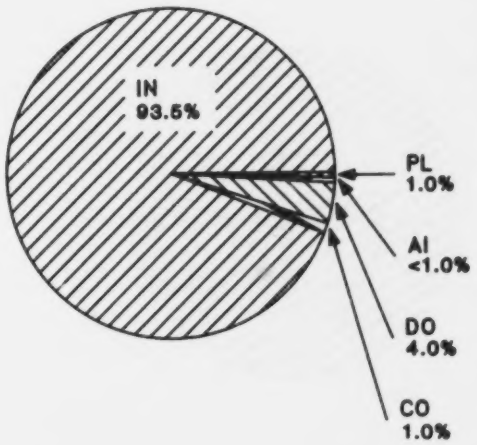
REPORTED WITHDRAWAL
(in million gallons per day)

Ground water (GW)	0.48
Surface water (SW)	22.17
Total	22.65

ESTIMATED USE
(in million gallons per day)

Domestic (DO)	0.94
Commercial (CO)	.25
Industrial (IN)	22.38
Public and Losses (PL)	.32
Agricultural (AI)	.03
Total	23.92



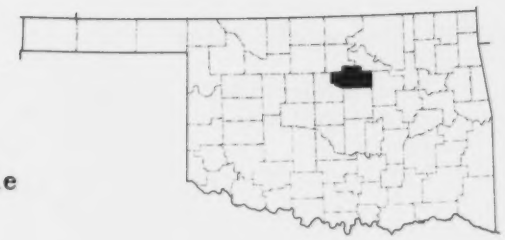


RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	22.65	1,443	37,750
Estimated use	23.92	1,524	
Surplus (deficit)	(1.27)	(81)	

PAYNE COUNTY

Area: 700 square miles
Population
Public Supplied: 57,360
Self Supplied: 7,740
Total: 65,100
Density: 93.0 persons per square mile

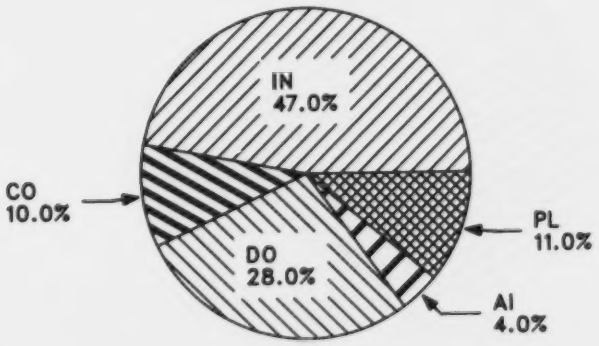


REPORTED WITHDRAWAL
(in million gallons per day)

Ground water (GW)	1.34
Surface water (SW)	7.16
Total	8.50

ESTIMATED USE
(in million gallons per day)

Domestic (DO)	3.93
Commercial (CO)	1.36
Industrial (IN)	6.56
Public and Losses (PL)	1.61
Agricultural (AI)	.55
Total	14.01



RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	8.50	131	12,140
Estimated use	14.01	215	
Surplus (deficit)	(5.51)	(84)	

PITTSBURG COUNTY

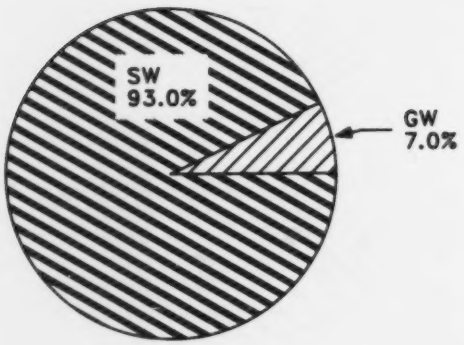
Area: 1,369 square miles
Population
Public Supplied: 36,690
Self Supplied: 4,110
Total: 40,800
Density: 29.8 persons per square mile

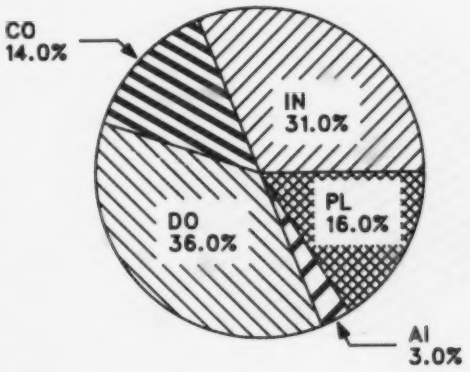
REPORTED WITHDRAWAL
(in million gallons per day)

Ground water (GW)	0.39
Surface water (SW)	5.56
Total	5.95

ESTIMATED USE
(in million gallons per day)

Domestic (DO)	2.47
Commercial (CO)	.90
Industrial (IN)	2.02
Public and Losses (PL)	1.03
Agricultural (AI)	.19
Total	6.61



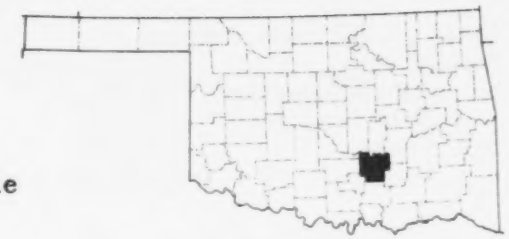


RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	5.95	146	4,350
Estimated use	6.61	162	
Surplus (deficit)	(.66)	(16)	

PONTOTOC COUNTY

Area: 723 square miles
Population
Public Supplied: 28,180
Self Supplied: 5,520
Total: 33,700
Density: 46.6 persons per square mile

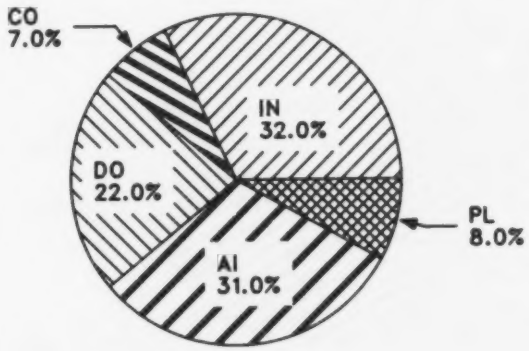


REPORTED WITHDRAWAL
(in million gallons per day)

Ground water (GW)	3.34
Surface water (SW)	6.35
Total	9.69

ESTIMATED USE
(in million gallons per day)

Domestic (DO)	2.03
Commercial (CO)	.62
Industrial (IN)	3.01
Public and Losses (PL)	.79
Agricultural (AI)	2.94
Total	9.39

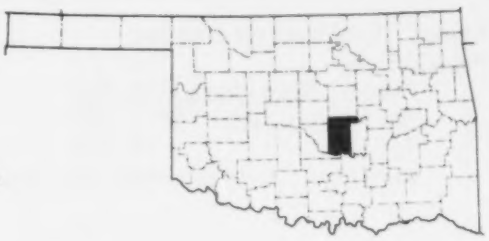


RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	9.69	288	13,400
Estimated use	9.39	279	
Surplus (deficit)	.30	9	

POTTAWATOMIE COUNTY

Area: 803 square miles
Population
Public Supplied: 44,770
Self Supplied: 16,130
Total: 60,900
Density: 75.8 persons per square mile

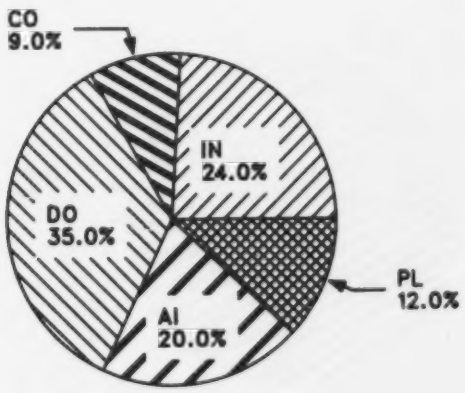


REPORTED WITHDRAWAL
(in million gallons per day)

Ground water (GW)	2.06
Surface water (SW)	3.46
Total	5.52

ESTIMATED USE
(in million gallons per day)

Domestic (DO)	3.63
Commercial (CO)	.98
Industrial (IN)	2.56
Public and Losses (PL)	1.25
Agricultural (AI)	2.05
Total	10.47



RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	5.52	91	6,870
Estimated use	10.47	172	
Surplus (deficit)	(4.95)	(81)	

PUSHMATAHA COUNTY

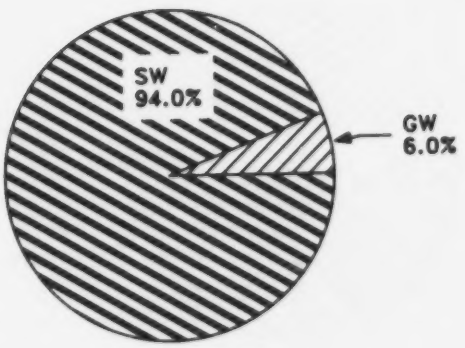
Area: 1,423 square miles
Population
Public Supplied: 10,150
Self Supplied: 1,850
Total: 12,000
Density: 8.4 persons per square mile

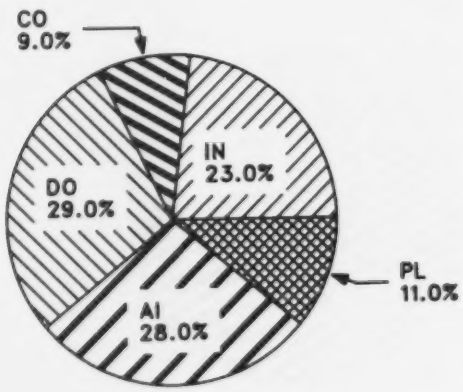
REPORTED WITHDRAWAL
(in million gallons per day)

Ground water (GW)	0.10
Surface water (SW)	1.60
Total	1.70

ESTIMATED USE
(in million gallons per day)

Domestic (DO)	0.72
Commercial (CO)	.22
Industrial (IN)	.56
Public and Losses (PL)	.28
Agricultural (AI)	.68
Total	2.46



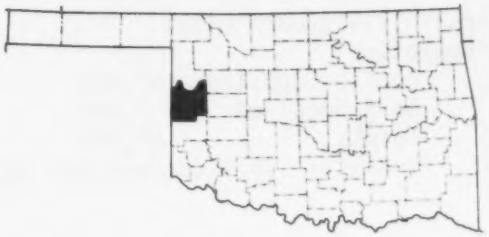


RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	1.70	142	1,190
Estimated use	2.46	205	
Surplus (deficit)	(.76)	(63)	

ROGER MILLS COUNTY

Area: 1,140 square miles
Population
Public Supplied: 4,490
Self Supplied: 3,310
Total: 7,800
Density: 6.8 persons per square mile

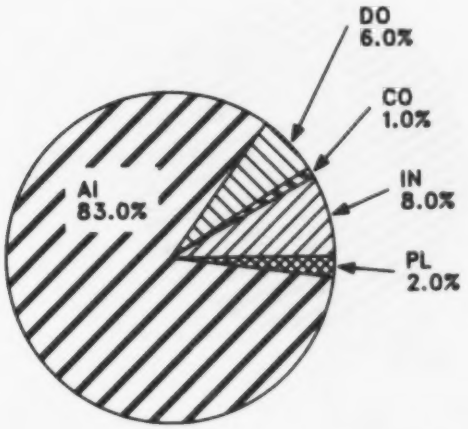


REPORTED WITHDRAWAL
(in million gallons per day)

Ground water (GW)	5.92
Surface water (SW)	1.94
Total	7.86

ESTIMATED USE
(in million gallons per day)

Domestic (DO)	0.46
Commercial (CO)	.10
Industrial (IN)	.64
Public and Losses (PL)	.13
Agricultural (AI)	6.60
Total	7.93



RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	7.86	1,008	6,890
Estimated use	7.93	1,017	
Surplus (deficit)	(.07)	(9)	

ROGERS COUNTY

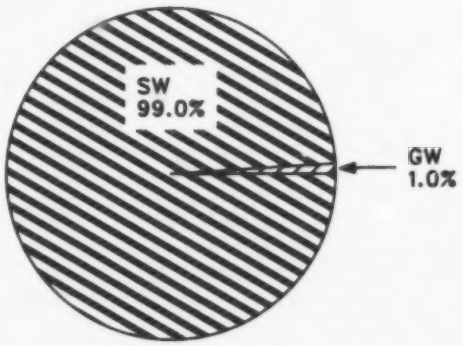
Area: 714 square miles
Population
Public Supplied: 42,700
Self Supplied: 7,500
Total: 50,200
Density: 70.3 persons per square mile

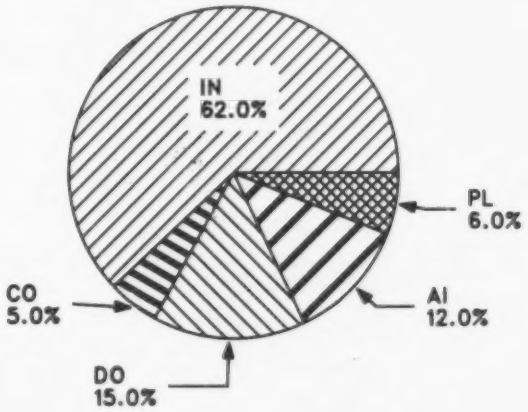
REPORTED WITHDRAWAL
(in million gallons per day)

Ground water (GW)	0.42
Surface water (SW)	40.07
Total	40.49

ESTIMATED USE
(in million gallons per day)

Domestic (DO)	3.02
Commercial (CO)	.94
Industrial (IN)	12.12
Public and Losses (PL)	1.20
Agricultural (AI)	2.32
Total	19.60



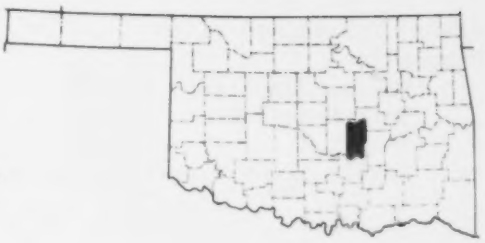


RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	40.49	807	56,710
Estimated use	19.60	390	
Surplus (deficit)	20.89	417	

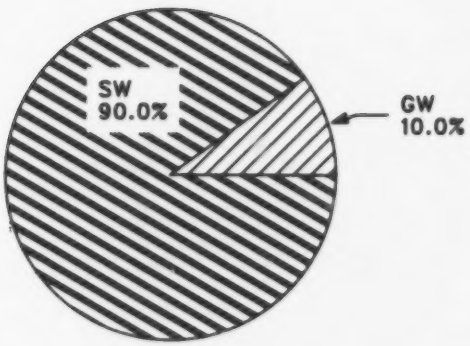
SEMINOLE COUNTY

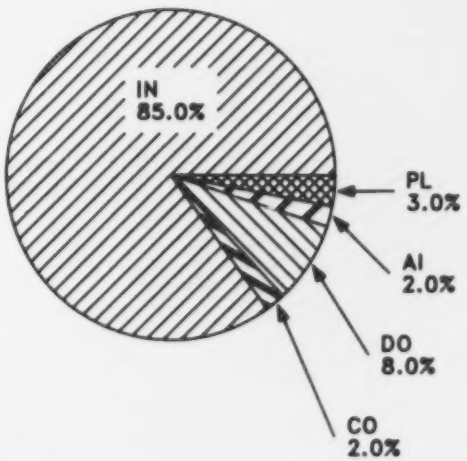
Area: 632 square miles
Population
Public Supplied: 22,110
Self Supplied: 7,090
Total: 29,200
Density: 46.2 persons per square mile



REPORTED WITHDRAWAL (in million gallons per day)	
Ground water (GW)	2.40
Surface water (SW)	21.58
Total	23.98

ESTIMATED USE (in million gallons per day)	
Domestic (DO)	1.75
Commercial (CO)	.49
Industrial (IN)	19.28
Public and Losses (PL)	.62
Agricultural (AI)	.38
Total	22.52



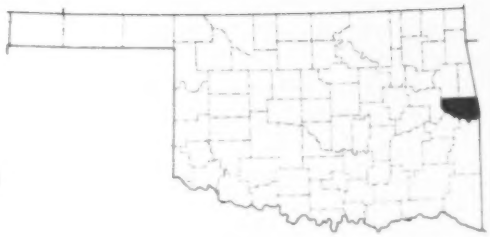


RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	23.98	821	37,940
Estimated use	22.52	771	
Surplus (deficit)	1.46	50	

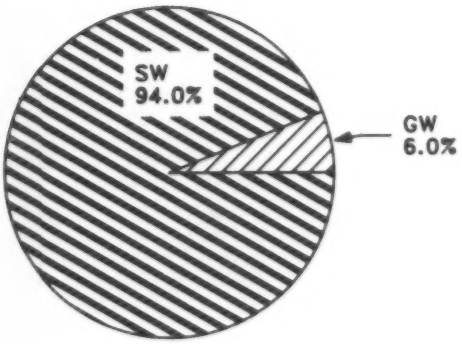
SEQUOYAH COUNTY

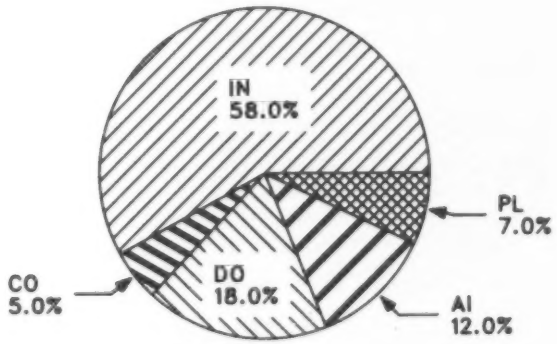
Area: 713 square miles
Population
Public Supplied: 25,500
Self Supplied: 6,500
Total: 32,000
Density: 44.9 persons per square mile



REPORTED WITHDRAWAL (in million gallons per day)	
Ground water (GW)	0.53
Surface water (SW)	8.37
Total	8.90

ESTIMATED USE (in million gallons per day)	
Domestic (DO)	1.92
Commercial (CO)	.58
Industrial (IN)	6.30
Public and Losses (PL)	.71
Agricultural (AI)	1.28
Total	10.79



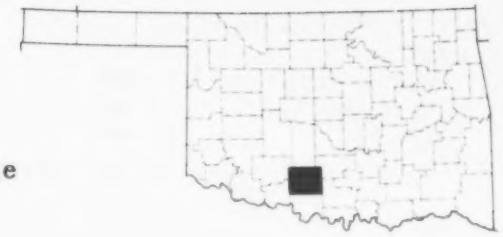


RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	8.90	278	12,480
Estimated use	10.79	337	
Surplus (deficit)	(1.89)	(59)	

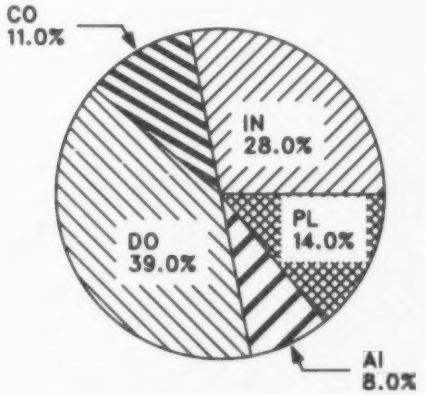
STEPHENS COUNTY

Area: 894 square miles
Population
- Public Supplied: 35,870
- Self Supplied: 13,230
- Total: 49,100
- Density: 54.9 persons per square mile



REPORTED WITHDRAWAL (in million gallons per day)	
Ground water (GW)	1.20
Surface water (SW)	6.41
Total	7.61

ESTIMATED USE (in million gallons per day)	
Domestic (DO)	2.93
Commercial (CO)	.79
Industrial (IN)	2.07
Public and Losses (PL)	1.00
Agricultural (AI)	.60
Total	7.39



RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	7.61	155	8,510
Estimated use	7.39	151	
Surplus (deficit)	.22	4	

TEXAS COUNTY

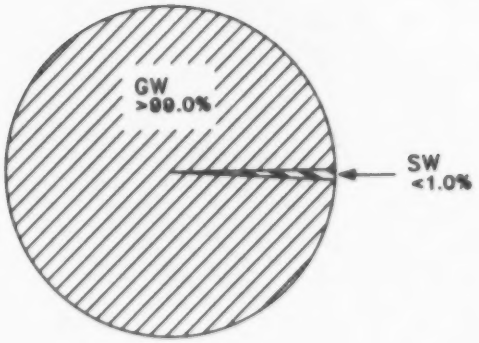
Area: 2,062 square miles
Population
Public Supplied: 14,240
Self Supplied: 3,460
Total: 17,700
Density: 8.6 persons per square mile

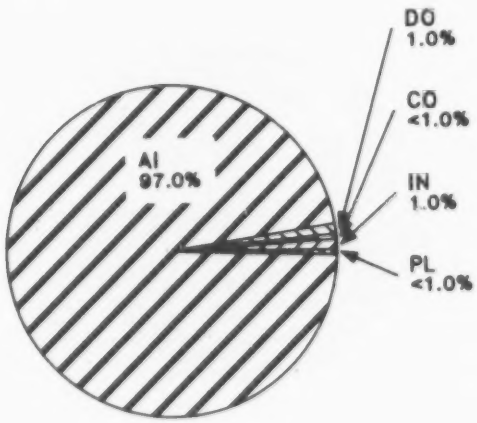
REPORTED WITHDRAWAL
(in million gallons per day)

Ground water (GW)	189.17
Surface water (SW)	.84
Total	190.01

ESTIMATED USE
(in million gallons per day)

Domestic (DO)	1.06
Commercial (CO)	.50
Industrial (IN)	1.50
Public and Losses (PL)	.40
Agricultural (AI)	184.70
Total	188.16



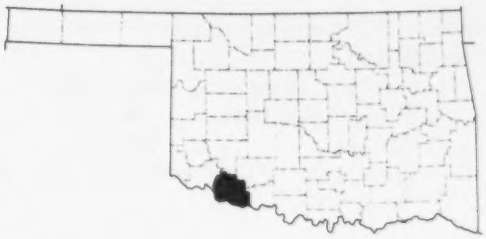


RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	190.01	10,735	92,150
Estimated use	188.16	10,631	
Surplus (deficit)	1.85	104	

TILLMAN COUNTY

Area: 902 square miles
Population
Public Supplied: 11,260
Self Supplied: 740
Total: 12,000
Density: 13.3 persons per square mile

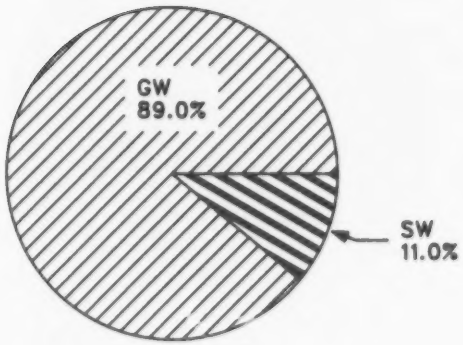


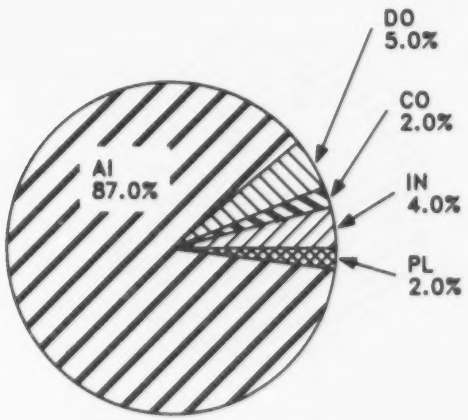
REPORTED WITHDRAWAL
(in million gallons per day)

Ground water (GW)	13.57
Surface water (SW)	1.66
Total	15.23

ESTIMATED USE
(in million gallons per day)

Domestic (DO)	0.73
Commercial (CO)	.25
Industrial (IN)	.62
Public and Losses (PL)	.32
Agricultural (AI)	13.34
Total	15.26



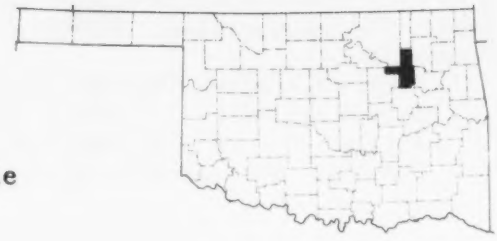


RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	15.23	1,269	16,880
Estimated use	15.26	1,272	
Surplus (deficit)	(.03)	(3)	

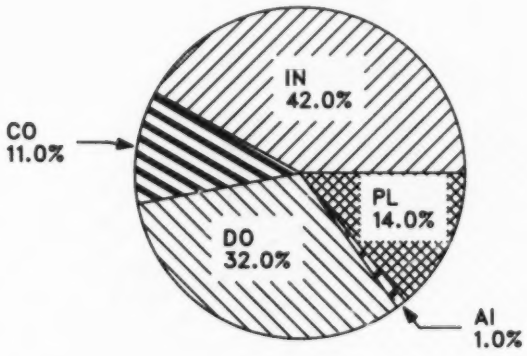
TULSA COUNTY

Area: 588 square miles
Population
- Public Supplied: 466,030
- Self Supplied: 24,170
- Total: 490,200
- Density: 833.7 persons per square mile



REPORTED WITHDRAWAL (in million gallons per day)	
Ground water (GW)	2.60
Surface water (SW)	13.85
Total	16.45

ESTIMATED USE (in million gallons per day)	
Domestic (DO)	29.78
Commercial (CO)	10.25
Industrial (IN)	40.20
Public and Losses (PL)	13.05
Agricultural (AI)	.53
Total	93.81



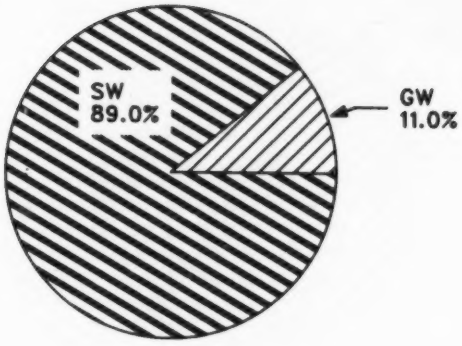
	RATES		
	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	16.45	34	27,980
Estimated use	93.81	191	
Surplus (deficit)	(77.36)	(157)	

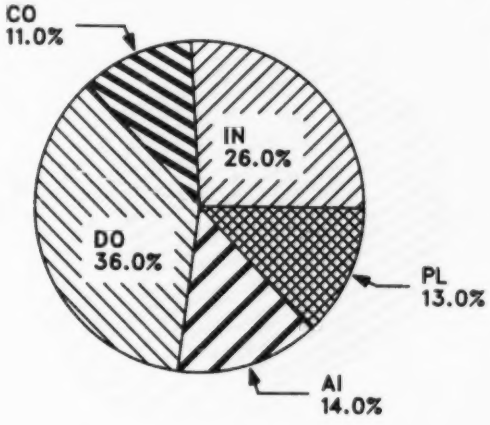
WAGONER COUNTY

Area: 595 square miles
Population
Public Supplied: 37,510
Self Supplied: 9,290
Total: 46,800
Density: 78.7 persons per square mile

REPORTED WITHDRAWAL (in million gallons per day)	
Ground water (GW)	0.72
Surface water (SW)	6.00
Total	6.72

ESTIMATED USE (in million gallons per day)	
Domestic (DO)	2.81
Commercial (CO)	.83
Industrial (IN)	2.06
Public and Losses (PL)	1.05
Agricultural (AI)	1.13
Total	7.88



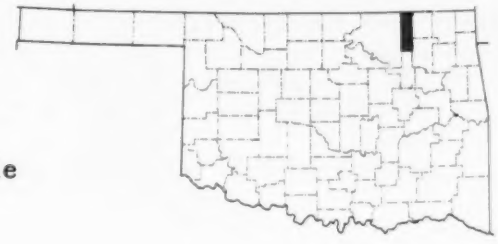


RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	6.72	144	11,290
Estimated use	7.88	168	
Surplus (deficit)	(1.16)	(24)	

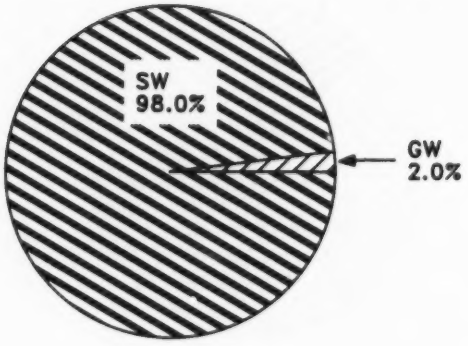
WASHINGTON COUNTY

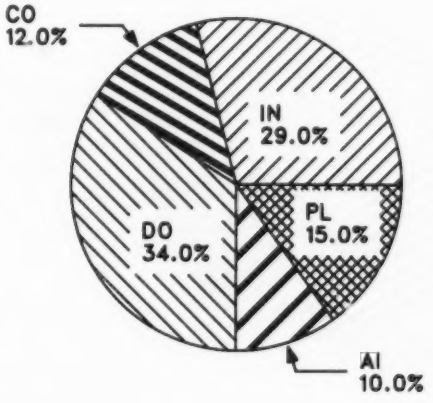
Area: 425 square miles
Population
Public Supplied: 50,720
Self Supplied: 1,880
Total: 52,600
Density: 123.8 persons per square mile



REPORTED WITHDRAWAL (in million gallons per day)	
Ground water (GW)	0.11
Surface water (SW)	5.49
Total	5.60

ESTIMATED USE (in million gallons per day)	
Domestic (DO)	3.20
Commercial (CO)	1.12
Industrial (IN)	2.79
Public and Losses (PL)	1.42
Agricultural (AI)	.99
Total	9.52



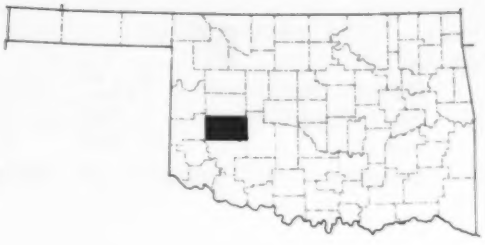


RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	5.60	106	13,180
Estimated use	9.52	181	
Surplus (deficit)	(3.92)	(75)	

WASHITA COUNTY

Area: 1,010 square miles
Population
Public Supplied: 12,460
Self Supplied: 5,940
Total: 18,400
Density: 18.2 persons per square mile

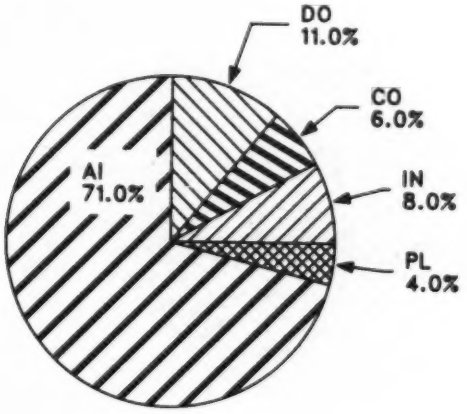


REPORTED WITHDRAWAL
(in million gallons per day)

Ground water (GW)	6.05
Surface water (SW)	5.23
Total	11.28

ESTIMATED USE
(in million gallons per day)

Domestic (DO)	1.09
Commercial (CO)	.57
Industrial (IN)	.77
Public and Losses (PL)	.35
Agricultural (AI)	6.90
Total	9.68



RATES

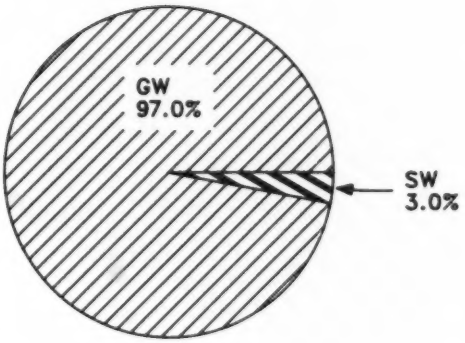
	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	11.28	613	11,170
Estimated use	9.68	526	
Surplus (deficit)	1.60	87	

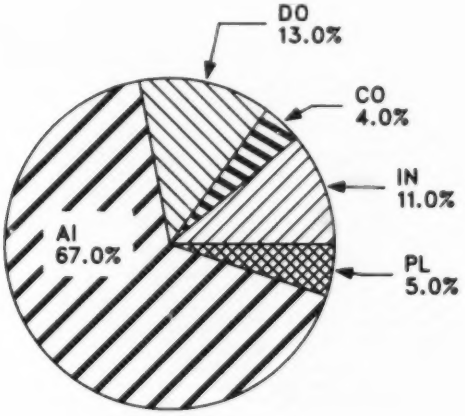
WOODS COUNTY

Area: 1,298 square miles
Population
Public Supplied: 9,760
Self Supplied: 1,240
Total: 11,000
Density: 8.5 persons per square mile

REPORTED WITHDRAWAL (in million gallons per day)	
Ground water (GW)	3.45
Surface water (SW)	.12
Total	3.57

ESTIMATED USE (in million gallons per day)	
Domestic (DO)	0.66
Commercial (CO)	.21
Industrial (IN)	.58
Public and Losses (PL)	.27
Agricultural (AI)	3.46
Total	5.18



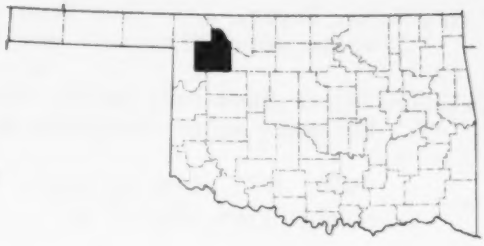


RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	3.57	325	2,750
Estimated use	5.18	471	
Surplus (deficit)	(1.61)	(146)	

WOODWARD COUNTY

Area: 1,255 square miles
Population
Public Supplied: 18,540
Self Supplied: 6,460
Total: 25,000
Density: 19.9 persons per square mile

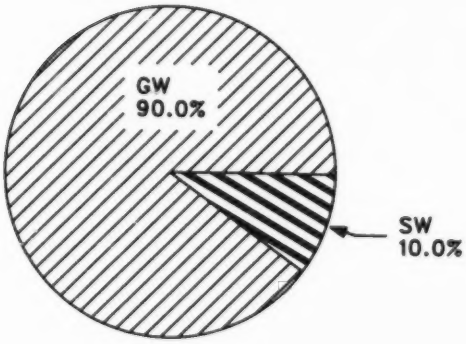


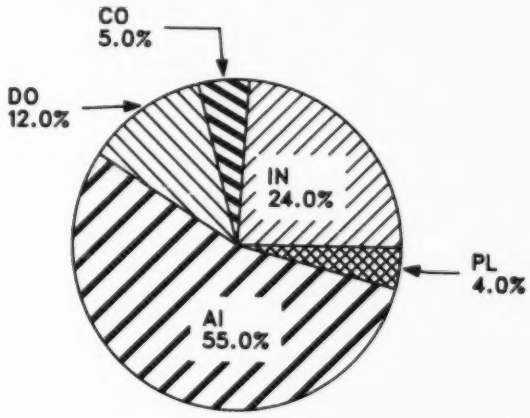
REPORTED WITHDRAWAL
(in million gallons per day)

Ground water (GW)	11.27
Surface water (SW)	1.26
Total	12.53

ESTIMATED USE
(in million gallons per day)

Domestic (DO)	1.49
Commercial (CO)	.61
Industrial (IN)	2.83
Public and Losses (PL)	.52
Agricultural (AI)	6.54
Total	11.99





RATES

	MILLION GALLONS PER DAY	GALLONS PER CAPITA PER DAY	GALLONS PER SQUARE MILE PER DAY
Reported withdrawal	12.53	501	9,980
Estimated use	11.99	480	
Surplus (deficit)	.54	21	

REFERENCES

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